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ATLANTIC CITY LIGHTING STANDARDS

LOOKING UP ATLANTIC AVENUE

By RALPH SELDEN EDMONDSON

ATLANTIC AVENUE is the main thoroughfare of Atlantic City, N. J., and extends from Absecon Inlet on its easterly end throughout the entire length of the city. It is one hundred feet in width, having a driveway of seventy feet, with fifteen foot sidewalks on either side.

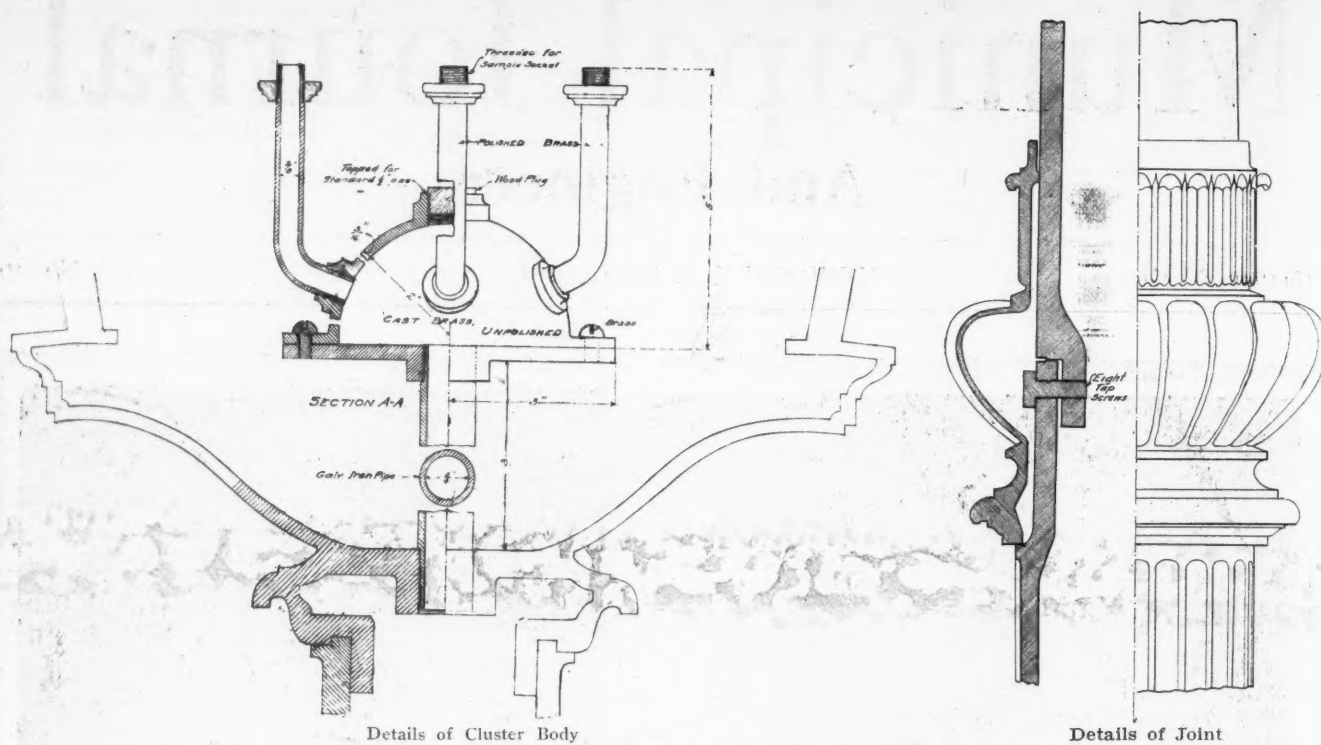
The lighting standards herein described are spaced at intervals of about one hundred feet along the curb on both sides of the driveway, from the easterly end of the avenue to its intersection with Albany Avenue—a total distance of about two and five-eighths miles. With the exception of the last three blocks, this portion of Atlantic Avenue is straight, and the effect at night is very pleasing as one views the rows of lights extending as far as the eye can see.

The standards are of two types, Corner Standards and Intermediate Standards. Ornamental bronze crest-

ing was designed to be placed around the tops of the lanterns, but, as is shown by the photographs, this has been omitted. In the bids, prices were submitted for the standards with and without this cresting. It was decided to dispense with this feature, as it was felt that the appearance of the standards would not be materially impaired thereby, and a saving of some four thousand dollars could be made by so doing.

The standards are made of cast-iron, with the exception of the lanterns which enclose the incandescent lamps, these being made of bronze.

The corner standards were cast in two sections, the joint being located within the urn-shaped portion, just under the street sign. This urn-shaped piece was cast separately, and then broken in two parts, with vertical joints (practically invisible when rejointed) so that it could be fitted around the shaft after erection, thus concealing from view the joint in the shaft. The con-



Details of Cluster Body
CORNER STANDARD USED IN ATLANTIC CITY LIGHTING

struction of this joint is shown in the drawing. The top, cross-arms, brackets for incandescent lamps and for street signs, were all cast separately, and attached to the standards after erection.

With the exception of the bronze lantern and cross-arms, the intermediate standards are cast in one piece.

Doors fitted with Yale locks are provided in the bases of both types of standards, giving access to the interior for installing the necessary wires carrying current for illumination; also for police and fire alarm connections, which are attached to a few of the corner standards. At the present time current for illumination is supplied by wires from the outside, but conduits were inserted in the foundations of all the standards, through which connections will be run at some later date, when the supply wires have been buried in conduits beneath the sidewalks.

As noted above, the standards are spaced at intervals of about one hundred feet, but those on one side of the street are, with a few exceptions, not placed directly opposite those on the other side. In other words, they may be said to be staggered, except where it was found impracticable to do so on account of irregular block distances. The corner standards are located at the intersections of all the main cross streets, and in nearly all cases are placed on diagonally opposite corners, there being but two corner standards at each street intersection.

The two lanterns supported by brackets on the corner standards are exactly similar to the lanterns on the intermediate standards, and at the same height above the sidewalk. It is thus seen that the scheme of illumination really consists of two parts—that of arc lamps at the top of the corner standards, 26½ feet above the sidewalk, and that of the incandescent lamps at the lower elevation of 9½ feet. The latter comprise

clusters of six incandescent lamps to each lantern. The bulbs are supported by a cast brass cluster-body which raises them well up in the lantern, in order to avoid as much shadow as possible; and the six sockets are spaced closely together so as to give, at a short distance, the effect of a single bright light. Provision is also made in this brass support for the insertion of a single high power light in the center, if it is desired at any future time to change the six-unit system.

The corner standards carry a frame for the street signs just below the bracket supporting the lanterns about 8 feet above the sidewalk. This frame holds four glass signs; the two sides which are parallel with Atlantic Avenue have that name etched on the glass, while on the two other sides is etched the name of the intersecting street. The names are etched on dark blue flashed glass, and stand out very distinctly on this background. At night each name is illuminated by means of two incandescent lamps placed in a copper box, fastened to the main shaft of the standard, directly back of the sign. In this box, and interposed between the glass name and the two lights, is a sheet of prism glass, which is placed in such a manner as to diffuse the light uniformly over the whole name. The copper box enclosing the incandescent lamps is painted on the inside with white enamel paint. It has a hinged cover, opening on the top to afford access to the lamps.

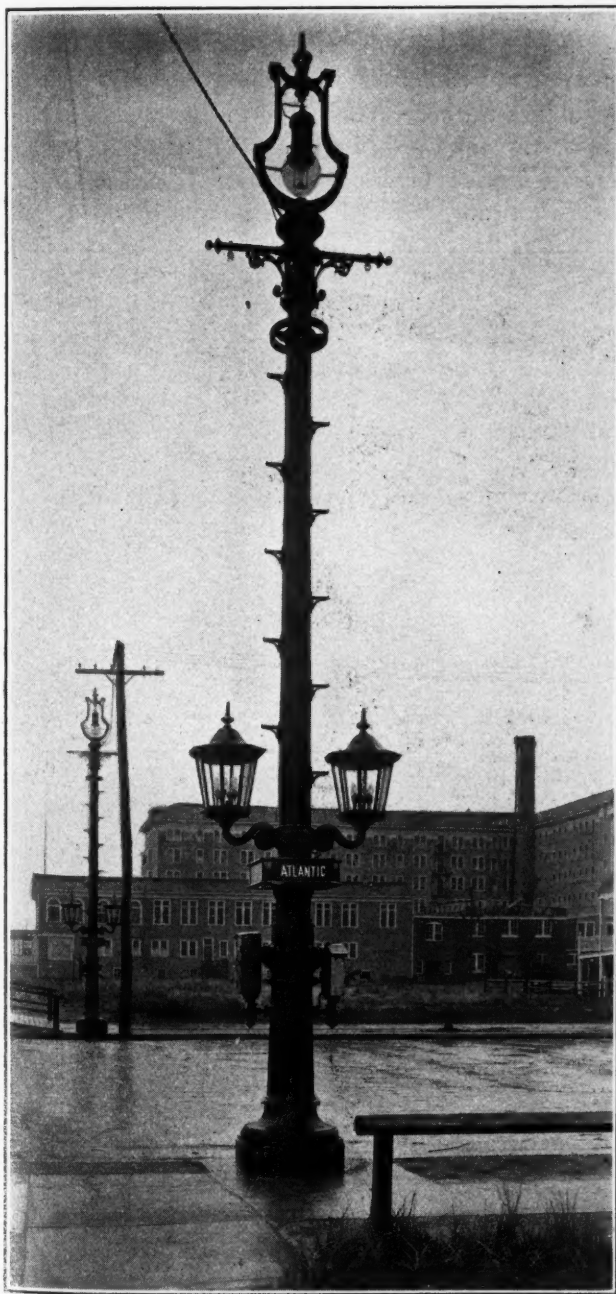
The incandescent lamps are of the new Tungsten filament type, each lamp being twenty candle power. Current is supplied by the local electric light company, with which the city has entered into a five-year contract. By the terms of this contract the electric light company agrees to furnish and maintain all incandescent lamps, sockets, wiring, etc., and to keep the same illuminated from one hour after sunset until midnight, for the sum of \$3.24 per lamp per year. Carbon fila-

ment lamps are used for illuminating the street signs, and the price for these is \$2.23 per lamp per year. The arc lamps on the corner standards are, of course, continued in service all night.

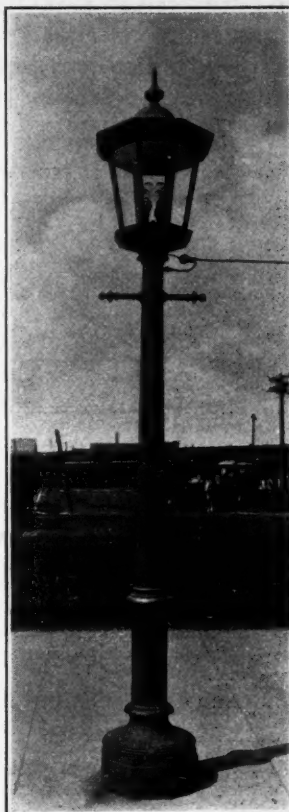
The standards are to receive three coats of paint. The color selected by the architects is verdigris green, with the exception of that part of the shaft of the corner standards extending from the urn-shaped portion upwards, which will be Venetian red. The tops and all projections, such as cross-arms, steps, etc., are to be green.

The cross-arms of the corner standards are provided with rings, from which pennants may be swung on gala occasions.

The foundations of the corner standards consist of concrete cubes, 4 feet on a side, each supported by four piles 8 feet long. The intermediate standards have similar foundations, except that the concrete blocks are



CORNER STANDARD, ATLANTIC CITY
With Police and Fire Alarm Boxes Attached



INTERMEDIATE STANDARD

3 feet square by 18 inches high. The weight of the corner standards was approximately 4,200 lbs.; that of the intermediate standards 600 lbs.

The standards were fabricated and cast by the Bethlehem Foundry & Machine Company at their foundry in South Bethlehem, Pa. The cost to the city for each corner standard was \$280 and for each intermediate standard \$61, f. o. b. cars, Atlantic City.

Great pains were taken in the erection of the standards to secure verticality. A plumb bob was suspended from the center point at the top of each standard after it had been set upon the foundation bolts. The nuts on the bolts were then turned until the plumb bob hung over the geometrical center of the standard near the base. The doors at the base of the standards gave access to the interior for this purpose. When plumb, the top nuts of the foundation bolts were screwed down tight, and the space between the base of the standard and the top of the concrete foundation was filled in with more concrete and brought flush with the adjoining sidewalk. Where no sidewalks existed a concrete block 5 feet square was constructed at the proper grade about the base of the standard, to which future sidewalks can be joined.

The lighting standards were designed and the specifications for the same were drawn by Messrs. Carrere & Hastings, architects, New York City. The foundations were designed by former City Engineer J. W. Hackney, under whose supervision the whole project was carried out.

CLINTON, MASS., WATER WORKS NOTES

"ALL water rates for the year 1908 are collected, and I want to thank the rate-payers for their promptness in settling their accounts." Water Registrar Peter J. Cannon makes this statement in the report of the Clinton, Mass., Water Department for 1908. This certainly speaks well for both Mr. Cannon and the consumers, as most water works men can testify. Where unusually large consumption is found, notice is sent to the consumer and the department inspectors assist him to locate the leaks, which are generally found to be in a water closet. The aquaphone is found to be of great benefit in locating leaks. The average per capita consumption for all purposes is 41 gallons. On domestic metered services it averages about 16 gallons. There are 1,555 metered services and 211 unmetered.

REINFORCED PIPE IN WILMINGTON

Concrete Pipe Reinforced with Expanded Metal, and Laid During Last Winter—Methods and Cost of Construction and other Data.

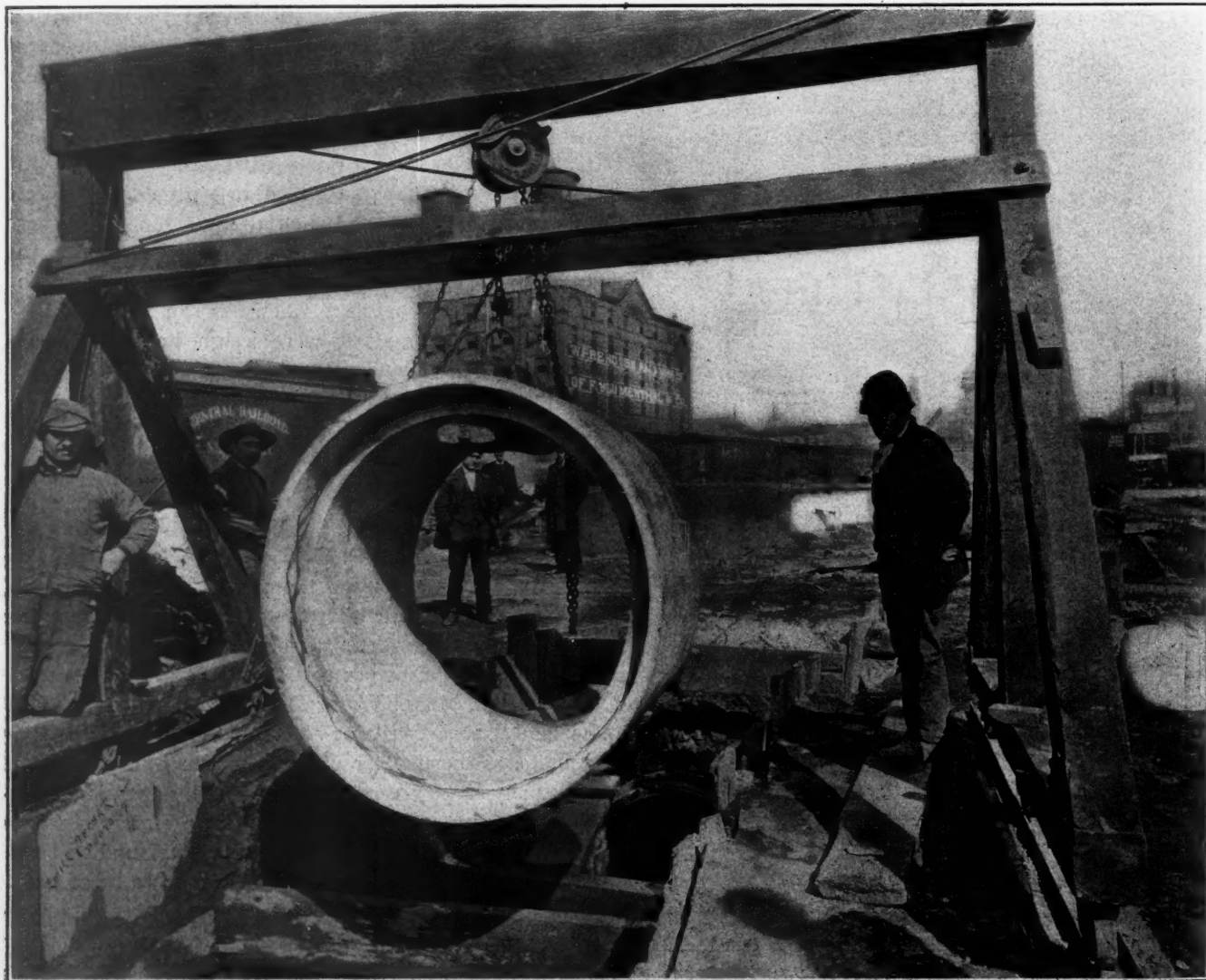
By ALEXANDER J. TAYLOR, Engineer in Charge of Sewers

OWING to a successful experience with reinforced concrete pipe on an outfall sewer, its use was suggested and adopted for the building of a sewer in one of the main business thoroughfares of Wilmington, Del. The construction was under the design and patent of the Lock Joint Pipe Company, from whom the forms were rented. The work consisted in extent of 600 feet of 48-inch, 300 feet of 36-inch, 1,600 feet of 30-inch and 800 feet of 24-inch pipe. The thicknesses varied from 5 inches for the 58-inch to $3\frac{1}{2}$ inches for the 24-inch sections, the two larger sizes being 3 feet and the two smaller 4 feet long. The latter length works very well, causing a smaller number of joints, but at the same time is probably the maximum for city work where gas, water and various other service pipes cross the ditch at close intervals, requiring sometimes considerable ingenuity to get the pipe to the bottom of the trench. In less congested districts greater lengths can be handled without serious difficulty.

The reinforcement in the sizes manufactured consisted of 3-inch mesh No. 10 gage expanded metal. This lapped one mesh on the longitudinal joint, and half a mesh extended beyond both the bell and the spigot ends, so that, when laid and joined, these overlapped locking the joints together, making the reinforcement continuous and regular throughout the entire extent of the work. The metal is placed concentric with and two inches from the interior surface of the pipe.

To form a smooth flow line and secure maximum density, with the sizes of the local stone, our concrete was mixed in the proportion of one part Portland cement, $1\frac{1}{2}$ parts coarse sand, $1\frac{1}{2}$ parts stone dust (from flour to $\frac{1}{4}$ -inch stone) and 3 parts $\frac{3}{4}$ -inch stone. This was put in place very wet and churned by using long-handled post spades for ramming. The results were entirely satisfactory and produced a surface which tends to reduce friction to a minimum. In addition to this, there is no question but that the reinforcing metal is thoroughly embedded throughout its entire extent.

Doubtless the general design of the molds are familiar to all. The pipes are cast in an upright position upon a cast-iron base, between two sheet iron wall forms, which are firmly fastened at the bottom by dowel pins



LAYING LOCK JOINT REINFORCED CONCRETE PIPE IN WILMINGTON, DEL.
Using Saw-horse Derrick

and by a slot in the base, while at the top an inner and an outer angle iron ring prevent spreading. The metal slips into the slot in the base, and when tied along the longitudinal joint maintains its correct position. When the concrete reaches the top a collar is put on and filled. The molding is then completed.

The collar and the wall forms are removed the succeeding day and the pipe allowed to remain on the base for three days. The smaller sizes are then thrown onto their sides and the bases removed, but in the larger ones this is more economically effected by the use of an ingenious turning device, owned by the pipe company. This consists of a semicircular iron band 6 inches wide, with a pulley wheel at each end, over which an endless rope passes, encircling the remaining half of the pipe and up to a hanging arm above. When hoisted, the rope tends not only to lift the pipe, but to turn it over onto the iron band upon which it finally rests. It is then lowered upon skids, the band removed and the pipe rolled away. After a seasoning period of three weeks the sections are ready for use, although some of ours were handled within ten days after being manufactured without any bad results. It is perhaps unnecessary to state that the concrete should be kept moist until finally set up and hard. In our case this was not necessary as the work was done in the winter and in the early spring and dried out slowly enough of itself. We worked in freezing weather, heating the water to possibly 125° F. and allowing this to thaw out what frost there might be in the stone and in the dust, so that the concrete was at a normal temperature when mixed and deposited in the forms. To prevent freezing after this was done, the molds, which were located so close as to allow only convenient working room around them, were enclosed by a movable shed built in three separate

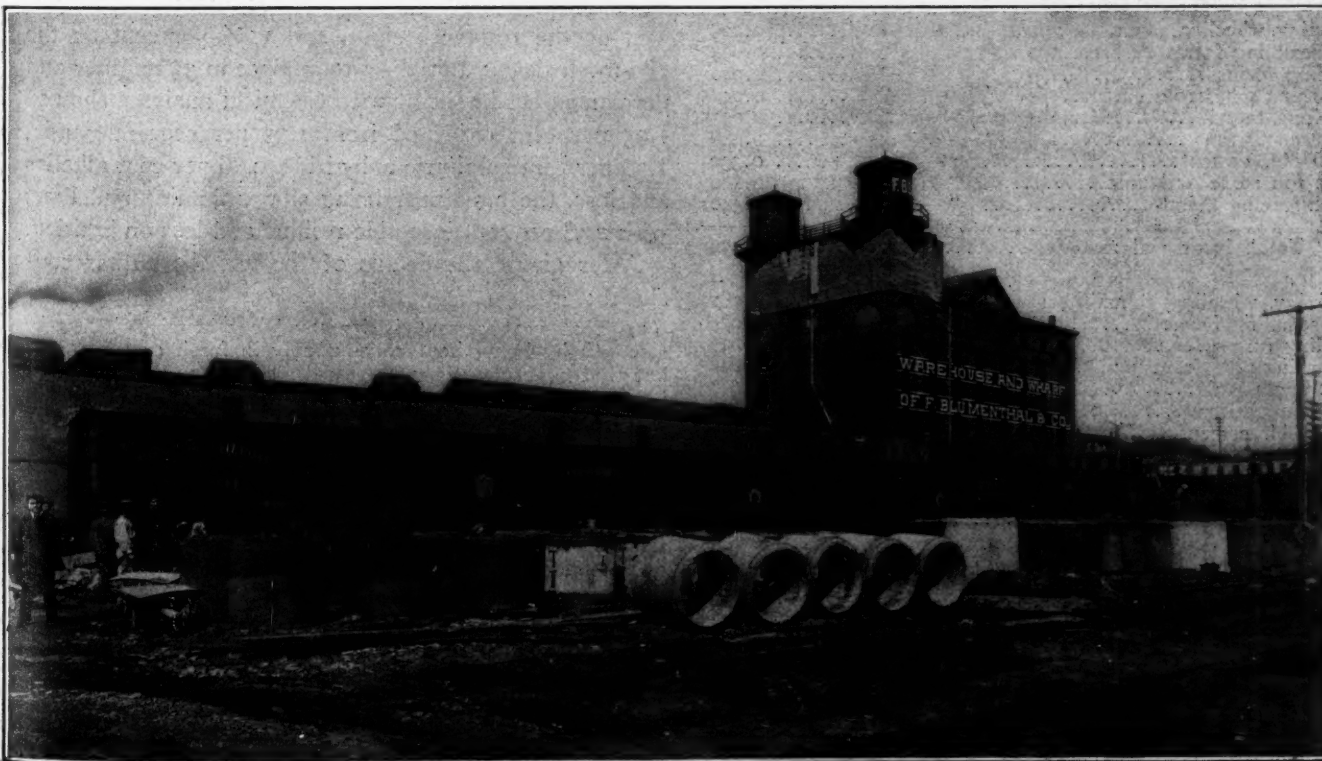
parts, a top and two sides, made of five pieces of 2 x 12-inch boards battened together and covered with two-ply roofing paper. Within the shed were placed salamanders or stoves made from some odd pieces of expanded metal bent cylindrically and fastened with wire. Lumps of soft coal were burned in these. This fire was kept up during the first night after molding. The shed was taken down the following morning to allow of stripping the form, and the next night was again erected without the fire; and after this no protection was deemed necessary. Critical examination seems to show that the pipe has not suffered from the cold in any way, but is as good as and probably better than those which would be made during the hot summer days.

No especial strength tests were made, but some of the 48-inch pipes, one month old, were laid under five railroad tracks, with about two feet cover, and have stood up perfectly.

Wherever openings for connections were desired, a cast-iron mold having a section corresponding to that of the bell of a terra-cotta pipe was slipped in between the wall forms and the concrete deposited around it.

Ordinarily the pipes are made along the line of the work, thus avoiding hauling; but in our case it was impossible to do this and at the same time care for street traffic, and we were compelled to haul for a distance of approximately 1,600 feet, which cost us on an average of 8 cents per lineal foot of pipe. Again, we have been handicapped by the small space available for storage while seasoning and have been compelled to make a portion of the pipe, lay that amount, and then return to complete the manufacture.

In laying we have used a saw-horse derrick having a span of 12 feet, with a small trolley car or top for carrying the pipe transversely across the ditch, sus-



MANUFACTURING REINFORCED CONCRETE PIPE AT WILMINGTON, DEL.

pended from which is a triplex block for hoisting and lowering the pipe; the latter being carried by a pipe hook made up of channels and plates.

After the pipe is laid the joints are sealed by plastering them in the invert to the springing line and grouting above this; the grout being retained by a circular steel band sprung in place in the interior of the pipe, which band has port-holes through which the grout is placed. When this band is removed the joint can be inspected and any imperfect places repaired.

Our attempts to get cost data on the laying of the pipe have been disappointing, the principal reason being our inability to make enough bottom to keep the pipe-laying gang busy. On the lower stretches of the work we had to cut through several hundred feet of old wharf logs and piling, as well as to take care of the tide water and of sewage entering our ditch from several pipes. Above this point our desire not to interfere with the business interests along the street prevented us from having open, at any one time, more than about 200 feet of ditch. In consequence it is perhaps better not to give any figures for such work, but to say that our best run has been 80 feet of 30-inch pipe in one-half day of 4 hours. The cost of labor only in sealing the joints varied from 2-3 man-hour at $\$0.18\frac{3}{4}$ = $\$0.12\frac{1}{2}$ per lineal foot of 48-inch pipe, to $\frac{1}{4}$ man-hour at $\$0.18\frac{3}{4}$ = $\$0.047$ per lineal foot of 30-inch pipe.

COST PER FOOT OF 48-INCH PIPE

| | |
|--|------------|
| Mixing, wheeling, ramming, 2 man-hr., at $\$0.18\frac{3}{4}$ | $\$0.3750$ |
| Assembling forms2/3 " "..... | 0.1250 |
| Turning pipe from base....1/4 " "..... | 0.0475 |
| Rolling metal1/4 " "..... | 0.0475 |
| Oiling forms1/9 " "..... | 0.020 |
| Foreman's time1/5 " "..... | 0.44 0.088 |
| .43 bbl. cement..... at $\$1.285$ net.... | 0.550 |
| .2 ton stone and dust..... " 1.50 per ton | 0.300 |
| Reinforcing metal " 0.0234 sq. ft.. | 0.410 |
| Total, labor and materials..... | $\$1.903$ |

COST PER FOOT OF 36-INCH PIPE

| | |
|--|------------|
| Mixing, wheeling, ramming, 1 1/2 man-hr., at $\$0.18\frac{3}{4}$ | $\$0.225$ |
| Assembling forms1/2 " "..... | 0.094 |
| Oiling forms1/9 " "..... | 0.020 |
| Turning pipe from base....1/4 " "..... | 0.0475 |
| Rolling metal1/4 " "..... | 0.0475 |
| Foreman's time1/5 " "..... | 0.44 0.088 |
| .26 bbl. cement..... at $\$1.285$ net.... | 0.330 |
| .12 ton stone and dust..... " 1.50 per ton | 0.180 |
| Reinforcing metal " 0.0234 sq. ft.. | 0.340 |
| Total, labor and materials..... | $\$1.372$ |

COST PER FOOT OF 30-INCH PIPE

| | |
|--|------------|
| Mixing, wheeling, ramming, 1 man-hr., at $\$0.18\frac{3}{4}$ | $\$0.1875$ |
| Assembling forms2/5 " "..... | 0.0750 |
| Oiling forms1/9 " "..... | 0.020 |
| Turning pipe from base....1/4 " "..... | 0.0475 |
| Rolling metal1/4 " "..... | 0.0475 |
| Foreman's time1/15 " "..... | 0.44 0.030 |
| .20 bbl. cement..... at $\$1.285$ net.... | 0.257 |
| .09 ton stone and dust..... " 1.50 per ton | 0.135 |
| Reinforcing metal " 0.0234 sq. ft.. | 0.260 |
| Total, labor and materials..... | $\$1.0595$ |

COST PER FOOT OF 24-INCH PIPE

| | |
|--|------------|
| Mixing, wheeling, ramming, 3/4 man-hr., at $\$0.18\frac{3}{4}$ | $\$0.125$ |
| Assembling forms2/5 " "..... | 0.075 |
| Oiling forms1/9 " "..... | 0.020 |
| Turning pipe from base....1/4 " "..... | 0.0475 |
| Rolling metal1/4 " "..... | 0.0475 |
| Foreman's time1/15 " "..... | 0.44 0.030 |
| .14 bbl. cement..... at $\$1.285$ net.... | 0.180 |
| .06 ton stone and dust..... " 1.50 per ton | 0.09 |
| Reinforcing metal " 0.0234 sq. ft.. | 0.21 |
| Total, labor and materials..... | $\$0.825$ |

The table gives the cost of the actual manufacture after our men had been well broken in from being engaged several weeks on the work. This does not include rental of the forms, royalty for use of patent, freight, nor any incidentals, but refers solely to the cost of labor and of the materials involved.

ACTION OF WATER ON CEMENT

Not only has the subject of the action of sea water on cement and concrete received the consideration of American engineers, one instance of which was referred to in the MUNICIPAL JOURNAL AND ENGINEER a few weeks ago, but French and British engineers also have conducted experiments upon this subject. Mr. Ernest R. Matthews, Borough Engineer of Bridlington, England, in a paper in *The Surveyor*, gives in detail the results of certain experiments conducted by himself, intended to discover the effect produced upon cement and concrete by immersing these in fresh and sea water, respectively; also the chemical action produced by mixing the cement with sea water. In connection with the first point he tested:

(a) The tensile strength of briquettes made with neat cement, 20 per cent of fresh water being added and the briquettes being immersed in fresh water for various periods.

(b) The tensile strength of similar briquettes kept in air for the same periods.

(c) The tensile strength of three-to-one briquettes subjected to the same conditions as referred to in (a).

(d) The tensile strength of three-to-one briquettes subjected to the same conditions as referred to in (b).

(e) The effect of immersing concrete, mixed with fresh water, in sea water for certain periods as compared with immersing it in fresh water or keeping it in air for the same periods.

(f) The effect of immersing in sea water for various periods concrete mixed with 20 per cent of sea water, as compared with immersing it in sea water for various periods when mixed with fresh water.

The cement used, when tested for fineness, left 2 per cent on the 100-mesh sieve, and 11 1/2 per cent on the 180-mesh sieve. Initial set took place in 35 minutes and permanent set in six hours. Chemical analyses showed 1.95 per cent oxide of iron, 1.25 per cent magnesia, 1.38 per cent sulphuric anhydride, 0.76 per cent alkalis and loss, the remainder being silica, alumina and lime, with 2.48 per cent insoluble residue and loss on ignition.

After giving the details of the test the author concludes:

(1) That neat cement is increased considerably in tensile strength by being kept continuously in fresh or sea water, but that concrete is practically of the same strength when immersed in these as when kept in air.

(2) That the use of sea water in the mixing of neat cement and the immersing of the briquettes in sea water cause them to have less strength at seven days than those mixed with fresh water and immersed in sea water; that at 14 days the former have the advantage over the latter; but from then to the 28th day briquettes mixed with sea water did not gain in strength, while those mixed with fresh water did.

Much the same results were obtained with the three-to-one briquettes, except that they appeared to be unaffected by the use of sea water in mixing.

He also concludes that there is practically no difference in tensile strength between briquettes mixed with fresh water and immersed in sea water, those mixed

with fresh and immersed in fresh water, and those remaining in air. He refers to tests made by Mr. James Watson, which indicated that any detrimental effect produced by the use of sea water in mixing concrete is neutralized by immersing this in fresh water. He refers to numerous experiments of Candlot and of Alexandre, which also indicated that the use of sea water in mixing sand briquettes did not affect their strength.

He discusses the chemical composition of sea water and states that from a theoretical point of view he would not expect its use to be attended with any unsatisfactory results; but that the latest tests have thoroughly indicated that it has a destructive action upon portland cement, caused by the dissolution of hydrate of lime and the subsequent deposition in the interior of the mass of a sulpho-aluminate of lime, which expands and causes disruption. He states that in the case of dense concrete the action would not be appreciable for five or six years, but disintegration may be completed in 20 years; while in porous concrete the disintegration would be more rapid. He gives two methods of allaying the destructive action of sea water; one to keep it several months in air, in order that by absorption of carbonic anhydride from the air the hydrate of lime may become carbonated and thus rendered insoluble; and by mixing puzzuolanic material with the cement, whereby some of the hydrate of lime is taken into combination with the silica and alumina and solution prevented. The first of these would be impracticable in many cases. It is also suggested that, since it is the expansion of the sulpho-aluminate which causes the damage, a cement which contained no alumina, but in which oxide of iron took the place of this, would not be subject to such destruction. This he states has not yet been proven.

He does not explain the fact that numerous harbor walls, docks and sea walls built of concrete are standing after several decades, apparently in good condition, except to suggest that, while the exterior is sound, the interior may contain cavities and fissures; an explanation which seems to us most improbable, since we cannot understand why such action should not begin

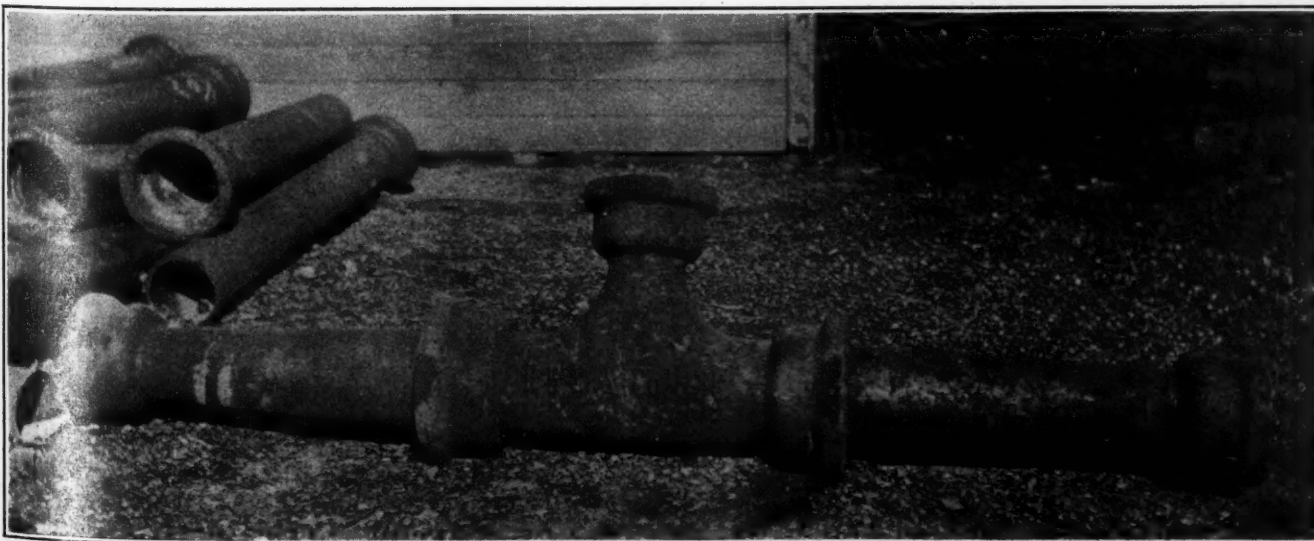
upon the face of the concrete rather than in the interior, and, moreover, such disintegration caused by the expansion of sulphate of alumina in the interior of a block would tend to disrupt it entirely. As the differences in strength of the various briquettes tested by the author under the various conditions upon which he based these conclusions were by no means excessive, the results do not seem to us sufficiently decisive to offset the practical experience of years just referred to.

WELL-PRESERVED CAST-IRON PIPE

THE accompanying photograph shows a section of cast-iron water pipe recently taken up at Marion, Ind., that had been down about thirty-two years. The date of manufacture, 1876, can be plainly seen on the T, and the white marks at the left were the original weight figures, which are partially obliterated. The pipe is in an excellent state of preservation and shows no effect of deterioration from tuberculation, electrolysis or other cause. On the interior of the pipe is a thin scale which is easily removed with the point of a knife. The water which the pipe carried was obtained from deep wells.

One section of four-inch pipe was broken when taken from the ground, and at the break was greatly honey-combed, showing a bad casting. In one spot there was a cavity in the shell of the pipe $3\frac{1}{2} \times 6$ inches. The metal on the exterior of this cavity was 1-32 inch thick and on the interior 3-64 inch, while the total thickness of the pipe was 7-16 inch. The pipe had been down thirty years and at various times had been under a pressure of 140 pounds.

Mr. Elkanah Hulley, the superintendent of the Marion water works, stated that in removing this stretch of old pipe from the ground two lengths were removed together, the pipe at the ends of these being cut in two as close to the face of the bell as possible. That portion remaining in the bell was then split in two unequal sections with a cold chisel and the smaller section removed. It was then an easy matter to remove the larger section. About ten minutes was required to remove the iron from the bell.



PIPE REMOVED FROM GROUND AFTER THIRTY-TWO YEARS' SERVICE

TESTING ASPHALT

Last of the Series of Articles on This Subject—General Considerations as to the Value of Previous Investigations and the Direction of Future Ones—Engineering Rather than Commercial Specifications

By HARRY TIPPER

IN former articles the writer has endeavored to bring to the attention of the engineer the absence of any standards concerning the use of asphalts for paving and other purposes, and the absence of any data at the present time which would indicate the actual value of an asphaltic material for any particular purpose. In consequence of this absence of general data, the tests which have been gotten up and the specifications under which asphaltic materials have been used for paving and other contracting work have been without any uniformity, without any definite standard and totally inadequate for providing the engineer with the proper materials without eliminating desirable competition. Important questions have apparently been overlooked in investigating the value of asphaltic materials, and standards have been adopted and established, to a certain extent, without any apparent reason or adequate evidence that they were valuable under all conditions. That this condition of affairs may be natural is admitted; but at the same time it cannot be called either satisfactory or as complying with good engineering practice.

The fact of the matter is that the asphalts largely used for many years were materials mined or dug and afterward subjected to sufficient refining to drive off some of the water and sediment. These materials were taken as the standards, and specifications were made to secure, not competition, but merely a certain degree of uniformity in the use of these materials. In addition to this, the character of the promotion work on asphalt, as well as on other lines of public work, has made it customary for producers and contractors to attempt to secure specifications, not so much indicating a valuable product as confining the use to the material they were particularly interested in.

In this way tests have been developed and specifications made which have generally had a tendency to favor some one particular material or group of materials, and the result has been that the engineering feature of all such specifications has been subsidiary to the promotion.

This situation is changing at present and there is an evident inclination on the part of engineers to take up this question seriously in the endeavor to arrive at some conclusions which will admit all desirable materials without reference to their source of supply or method of refining. It is, therefore, an appropriate time to take up the question of the trend which future investigations should take if they are to really develop the value of the different characteristics in an asphaltic bitumen and the necessary limitations to be imposed in a specification. When an attempt is made to consider the subject from a practical engineer's standpoint, it becomes evident that there are no data on the subject of asphaltic bitumens which will provide any basis for the consider-

ation of the relative value of different characteristics and the desirability of certain limitations.

No investigations have been made and no data have been worked out respecting the strains which come upon a pavement which would have a tendency to crack the asphaltic mixture or the relation which the compression effect of traffic bears to the contraction movement on a pavement. While it is evidently necessary that asphaltic bitumen should adhere to the mineral aggregate in the mix in order to produce a stable pavement, no attempt has been made to consider the amount of adhesiveness which is necessary to counteract the strains which come upon a pavement and which would have a tendency to break the bond between the asphalt and the mineral aggregate. Nor has any attempt been made to consider what detrimental effect in other directions may be accompanied by too large an amount of adhesiveness.

There have been no data which would present any practical basis for the consideration of the amount of susceptibility to temperature changes which is allowable, or should be allowed, in an asphaltic bitumen for paving purposes.

Asphaltic materials vary greatly in their characteristics. Materials found in deposits have never been found to possess the proper characteristics for the best work under all conditions. While some of the characteristics which they possess are valuable, others are detrimental. Different methods of refining crude petroleum produce asphaltic materials having different characteristics. All these characteristics have their value up to a certain point under certain conditions. It is desirable to investigate and find the most valuable material, possessing the different characteristics in such proportion that it will answer all the varying conditions most satisfactorily.

In order to do this it is evident that the nature and character of the strains to which an asphalt pavement is subjected under the conditions of work must be understood and estimated carefully. The effect which temperature changes will have upon the asphaltic mixture must be considered and the comparative value of one characteristic as against another must be fully understood.

These things cannot be properly investigated by testing asphaltic bitumens, one against the other, in the laboratory. Such a method of investigation, while it leads to an intimate knowledge of the variation between one asphaltic bitumen and another and provides an accurate basis of comparison between different bitumens, in no way represents conditions which will arise in the paving, nor does it allow any basis to be arrived at from which calculations as to the nature of the material to be desired can be drawn.

In other branches of the engineering profession it is not customary to investigate and compare the different

products and then develop specifications from such comparison without reference to the conditions of work under which they will be used. It would obviously be foolish to use a high-grade steel testing 100,000 pounds tensile strength, when the work will be adequately fulfilled by a material with a tensile strength of 30,000; although there might be, in comparing the one steel with the other, without reference to the work, some advantages in the stronger material.

The point the writer wishes to make here is that there is no use in saying that 5, 15, 25 or 30 ductility is necessary for an asphaltic bitumen to be used for paving, as there are no data to show what is necessary.

There is no use in stating that a material should have a penetration of 50 at 77°, 25 at 32° and 250 at 115°, or any other exact penetrations, when there are no data which will indicate what is the best penetration curve which a material should meet for paving purposes.

The fact of the matter is that, while there are a great many data on asphalt, and while chemists have been continually investigating this product, there are no data of any value on pavements, and from the practical engineer's standpoint there is nothing but precedent to guide him in considering the question of specifications for a material to fulfil paving conditions.

If any result is to be arrived at which will be valuable and based upon proper evidence, such evidence must be sought, not in the mere testing of asphaltic bitumens, but in the investigation and consideration of the conditions under which pavements are used, the resulting strains and the materials necessary to meet the conditions.

In concrete work it would be of no value to the construction engineer to have a lot of available data on the different portland cements, but it is of very great value to him to have comparative data on the strength of different mixtures with portland cement, on their ability to withstand different strains and the efficiency with which they will work under varying conditions.

Asphalt will be properly understood only when the efficiency of paving mixtures, under varying conditions with varying bitumens and percentage mixes, are thoroughly investigated and understood.

PRICES OF ARC LIGHTS IN CONNECTICUT

PRESIDENT WIEGAND, of the Hartford Board of Public Works, has compiled the following table of contract prices for street lights in several Connecticut cities:

| City | Number of Lamps | Price per Lamp | Hours of Burning per year |
|--------------------------|-----------------|----------------|---------------------------|
| Hartford | 800 | \$70.00 | 4,000 |
| Bridgeport | 630 | 79.75 | 4,000 |
| New Haven | 600 | 86.00 | 4,000 |
| Waterbury | 500 | 87.50 | 4,000 |
| New Britain | 180 | 85.00 | 4,000 |
| Meriden | 200 | 100.00 | 4,000 |
| New London | 208 | 85.50 | 4,000 |
| Willimantic | ... | 92.50 | 4,015 |
| Rockville | 80 | 75.00 | |
| Stamford | 38 | 85.00 | 4,000 |
| Bristol-Plainville | 110 | 67.50 | 2,500 |
| Danbury-Bethel | 125 | 67.00 | 2,400 |
| Putnam | 51 | 81.70 | 2,250 |

EAST ST. LOUIS WATER TREATMENT

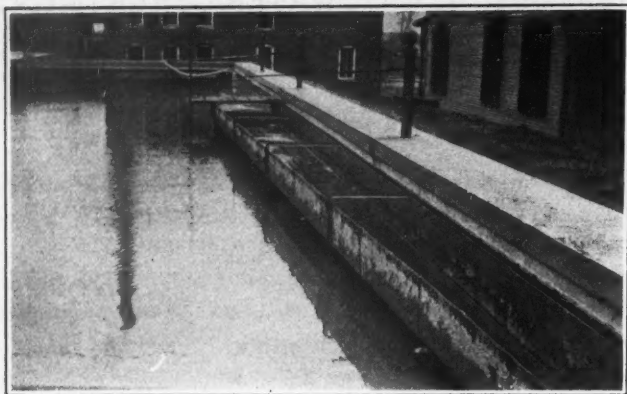
Plain Sedimentation—Coagulation with Lime and Iron
—Filtration—Effect of Temperature on
Sedimentation and Alkalinity

THE water supply of East St. Louis comes from the Mississippi River about one and one-half miles above the Eads Bridge. This takes it well above danger of pollution from the sewage of St. Louis and East St. Louis. Owing to the fact that the Missouri empties into the Mississippi only a few miles above, and that the current carries the water of the former to the east bank, it might be said that the water supply comes for the most part from the Missouri River. This water carries a large amount of suspended fine clay material, which is difficult of removal.

The low lift pumping plant contains one 10,000,000 and one 12,000,000-gallon pump. Water is delivered from this station to a plain sedimentation basin 200 by 220 feet, holding 4,500,000 gallons. This basin is divided into two separate basins for convenience in cleaning. No baffle walls are employed. The water rises through headers and overflows into the basin, giving an aerating effect; it then flows the length of the basin and is discharged by weir into a metal trough.

This plain sedimentation basin has been very effective in removing a considerable amount of mud. It is stated that the removal varies from nothing to 50 per cent, depending on the condition of the river. Recently some experiments have been made on the introduction of lime water as the water leaves the basin. The water flows from the plain sedimentation basin to the coagulation basin by gravity, and on the way a solution of iron sulphate is introduced. Lime water is added in the coagulation basin through an open pipe, as shown in photograph. This basin is 215 by 432 feet, with a capacity of 7,900,000 gallons. Baffle walls are introduced to give the water six changes of direction. It has been found that nearly all deposit takes place before the water makes the second turn, and a large percentage before the first turn is reached. The water on entering the basin is very muddy, but before passing to the filters it becomes fairly clear. The practice has been in the past to use about half as much iron as lime. Recently some experiments have been made on other lines, but these have not progressed far as yet. On the day this plant was visited the proportion was 0.6 grain iron to one grain lime, and the results were quite satisfactory.

From here the water flows to twenty-six rapid filters. Tests show 98 per cent bacterial removal in the filters, with practically total removal of color. The water then goes to a 1,250,000-gallon closed storage reservoir, from which the high-service pumps get their supply. There are two Holly pumps, one 8,000,000 and one 6,000,000 gallons capacity, both double compound condensing; also one Worthington triple-expansion 5,000,000-gallon pump and one triple-expansion 6,000,000-gallon Prescott. A crane spanning the engine room makes the handling of machinery easy. Three 250-horsepower Heine boilers supply steam.



TROUGH FOR TAKING WATER FROM MAIN SEDIMENTATION BASIN

In the chemical room are lime and iron tanks. In the supplying of chemicals to the water both the strength of the solution and the amount are varied. Some improvement in this system would seem advisable.

Some of the facts that have been observed in the operation of this plant are very interesting. It has been found that in cold weather there is much less matter deposited in the plain sedimentation basin than during hot weather. At the same time there is less natural alkalinity to the water in cold weather than in hot. Whether or not these two facts are definitely related has not been determined.

At certain times of year and condition of the water, when the turbidity is between 30 and 40, and the alkalinity is high (about 200), it is found that the filters clog rapidly. The water at such times appears to have a silvery, flakey appearance. The use of lime is then discontinued and alum substituted for the iron, about 0.6 grain per gallon being necessary.

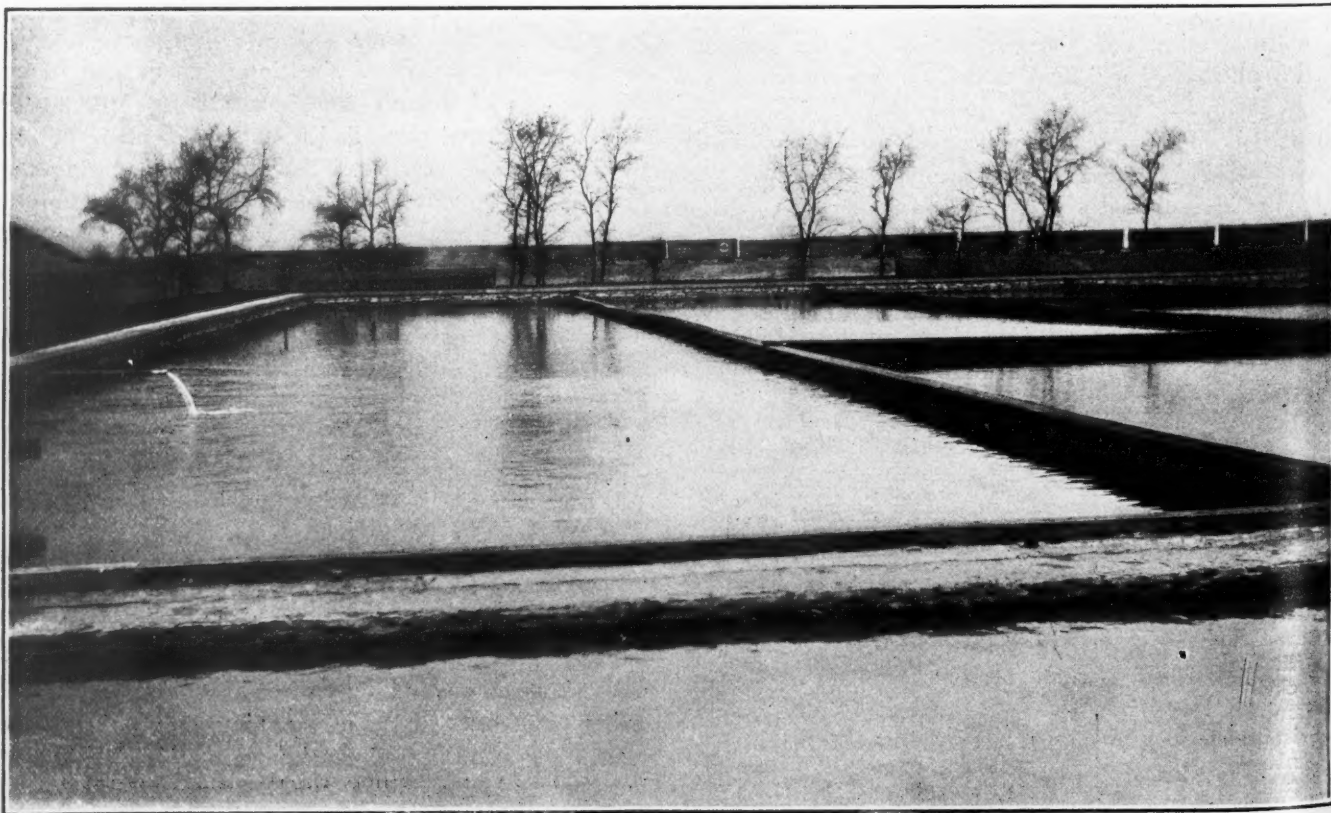
We are indebted to Mr. C. O. Strautz, chemist at the plant, for much of this information.

REPORT ON ILLINOIS SEPTIC TANKS

IN addition to the Lake Forest sewage purification plant, described last week, those at La Grange and Winnetka were described a few weeks ago in a special report by Dr. Arthur Lederer to the Board of Trustees of the Chicago Sanitary District. At La Grange the sewage from about five thousand people is treated in a septic tank only. No gaseous or putrid odor is noticed at any time in the neighborhood, and the tank has never been cleaned since its installation in 1901. The "total solids" are reduced about 87 per cent in the tank, and the "suspended organic matter" 96 per cent.

At Winnetka, Dr. Lederer found the peculiar condition that the septic tank has no opportunity to act upon the sewage, as about all the septic action to be expected takes place in the sewers. The last 400 feet of sewer nearest the tank has such a flat grade that the sewage seems almost stagnant, and analyses show that it is acting excellently as a septic tank. The total solids are reduced about 86 per cent in the sewer and the suspended organic matter about 96 per cent—the same reduction as in the La Grange septic tank. In the tank itself the organic matter is reduced only 6.9 per cent.

The reason for the abandonment of a septic tank at Glencoe was investigated by Dr. Lederer. This was designed for five thousand people, but has been out of commission for two years; the opposition of certain of the Village Board to any septic tank being held to be largely responsible. Neglect of the tank was apparently the immediate cause of its failure. "There was no experienced engineer at the head of it and nobody paid any attention to the plant. One man was hired to take care of the plant but once during the week." There is little wonder that this plant failed to operate satisfactorily.



SEDIMENTATION BASIN, SHOWING ADMISSION OF LIME WATER

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MAY 12, 1909.

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Life of Water Works Appliances

WE wish to call attention to the fact that the American Water Works Association has appointed a Committee on Depreciation, which desires to obtain information concerning the life of water works materials, to be presented in a report at the coming Milwaukee convention. What they especially desire are authentic instances of the ages of such appliances and materials at the time when they were displaced because of having become worn out, or of being too small, inefficient, weak or antiquated, or because accident or change of system required replacing them with new material. As the committee states, in a circular which it has recently is-

ued, "This question is one of growing importance in view of the constantly recurring cases of appraisal for purposes of sale, bond issues, taxation and the fixing of fair rates." Information is desired, among other things, concerning air pumps, boilers, buildings, chimneys, condensers, conduits, dams, filters, foundations, feed water heaters, hydrants, meters, pipe, pumping engines, services, standpipes, valves, wells, etc. If any of our readers have information on any of the points referred to above, we hope that they will communicate the same at their earliest convenience to the Secretary of the Committee on Depreciation, Mr. William H. Bryan, 315 Lincoln Trust Building, St. Louis, Mo.

Water Works Notes from Madison

THE Report for 1908 of John B. Heim, Superintendent of the Madison, Wis., Water Department, is an unusually well written and well printed one, and contains several matters of general interest. One of these is a recommendation for a dual water supply, a new supply to be obtained from Lake Mendota, "this water to be used for street sprinkling, automatic sewer lift, sewer flushing, syphons, street work, gas works supply, public lavatories and a complete fire protection. This would save our unsurpassed pure artesian well water for domestic purposes, do away with the worry over a possible shortage of water for street sprinkling and furnish an ample supply for fire protection." The proposition includes mains through most of the streets of the business district, and others so placed as to pass within three or four blocks of every other point in the city. "With the street sprinkling and the other free water cut off from our domestic consumption, our present three-million-gallon pump, under the meter system, will be ample for years to come." The estimated cost of such a system complete, including pumping plant, is \$150,000.

The free water referred to is furnished to eighteen school buildings, fourteen churches, ten public buildings and four charitable institutions, in addition to the uses named above.

"Street sprinkling valves are giving great satisfaction. They have minimized the repair account of the hydrants and are the life-saver of the hydrant. Where heretofore our hydrants were continuously out of order through constant use by the street sprinklers, and for street and sewer work, we now have none to repair. They have more than saved their cost by eliminating the repair of the hydrants. It is safe to say that now the hydrants are always in working order. Aside from that, we can now furnish the contractors with water from the hydrants, and all sewer flushing and street work can now be done through the use of the valves. Besides, the valve is a great assistance in case of a fire through its quick action."

Sewage Pumping at Plainfield

CITY SURVEYOR Andrew J. Gavett writes that the capacity of one-half the sewage pumping plant in that city, given on page 782 as 477 gallons per minute, should have been 277 gallons.

WOOD PAVEMENTS; PARIS AND AMERICA

Wood Blocks in Paris Not Creosoted to Any Extent—No Sand Cushion Used — Some Recent American Specifications—New York Pavements

PARIS WOOD PAVEMENTS

THE wood pavements of Paris have been frequently referred to as models, and it is therefore somewhat startling to find that they apparently are surpassed in excellence by those in this country. A paper presented to the International Road Congress by M. P. Tur, Chief Engineer of Bridges and Roads of Paris, has been reprinted by Mr. Nelson P. Lewis, Chief Engineer of the Board of Estimate and Apportionment of New York and delegate to that congress, in which the wood pavements of Paris are described at some length. Mr. Tur states that their success has been unquestioned, and their area now amounts to more than two million square meters, or nearly $2\frac{1}{2}$ million square yards.

As originally constructed in 1881, the wood blocks were slightly creosoted, placed upon a concrete foundation and the joints filled with a bituminous mastic for the lower one-third of their height and the remainder with a grout of cement mortar. The blocks were about $3\frac{1}{8}$ inches wide, $8\frac{2}{3}$ inches long and $5\frac{7}{8}$ inches high. The principal modifications introduced up to date have consisted in omitting the bituminous mastic, the entire joint being filled with cement mortar, and in reducing the height of the block. The concrete foundation is to-day made about $5\frac{7}{8}$ inches thick, with 4 inches on the lightly traveled streets. This is covered with about one-third of an inch of cement mortar, struck to a smooth surface.

"The city of Paris at the present confines itself to soaking the blocks which it manufactures in a hot bath of fat oil, improperly called creosote. This fat oil should contain at least 13 per cent of creosoted products, and at most 8 per cent of naphthaline during the winter and 13 per cent during the summer." The blocks are piled in wagon tanks which are filled with hot creosote, and after being left 20 to 30 minutes in this bath the blocks are piled in the storehouse. This creosoting is very superficial, the fat oil never penetrating more than a few thirty-seconds of an inch into perfect wood.

The blocks thus prepared are laid upon the mortar-covered concrete without any sand cushion. A joint is left along the curb about $1\frac{1}{2}$ inches wide which is filled with sand; which filler has naturally been found to be objectionable, but as yet bitumen has not been adopted. Instead of laying the blocks in close contact, successive rows are separated by a space about three-tenths of an inch, and these joints are filled with portland cement. The pavement is then covered with a layer of ordinary sand about one-third of an inch thick; and a few days later a layer of gravel is spread to a thickness of 1 inch to $1\frac{1}{2}$ inches.

In maintaining the pavement, gravel is spread three or four times a year during the wet season, this gravel being not more than 1 inch in its largest diameter. The

wooden pavements are washed as frequently as possible, both to prevent their being slippery and to prevent decaying; this offsetting to a certain extent the absence of sufficient creosote. The authorities seem to think that thorough creosoting is too expensive and state that, as wood block pavement on the business thoroughfares wears out in seven or eight years anyhow, it is needless to obtain a durability against decay for any greater time. They do not consider this a suitable pavement for little-frequented streets, because when so located they are not kept sufficiently clean to prevent decaying and do not wear out before such decay takes place.

Mr. Tur states that experience indicates that, especially in the case of hard wood blocks, the absence of a cushion apparently causes the upper ends of the fibers to be crushed, and thinks the use of some cushion would be advisable. An objectionable result of insufficient treatment of wood blocks in Paris is that they absorb considerable water and, swelling, exert thrusts which throw the curbs out of plumb and "displace and distort almost all the railway (track) systems which have been used up to the present."

AMERICAN SPECIFICATIONS

As a contrast to the Paris practice, as outlined above, may be presented a recent set of specifications bearing date of April 1, 1908, which have been prepared by the Wyckoff Pipe and Creosoting Company for creosoted wood block pavements, which they claim represent the best practice in this country and in Europe. These call for the customary rolling of subgrade and concrete foundation, the later to be $5\frac{1}{2}$ inches thick and to be covered with $\frac{1}{2}$ inch of mortar, the concrete being wet by sprinkling just before placing the mortar. This mortar is to be one part portland cement and three parts sand, the mortar being struck off to a true surface. The wood blocks are laid upon the mortar bed immediately after this has been surfaced. They are set with close joints and at right angles to the curb, and in uniform courses so that all longitudinal joints shall be covered by a lap of at least three inches, no closure or end block being used which is less than three inches long. The blocks are to be driven or forced together as closely as possible and rolled or rammed to a firm bearing and uniform surface; but no rolling or ramming is to be done within ten feet of where blocks are being laid. Defective blocks are to be removed and replaced with perfect ones immediately after rolling. The joints are then to be filled with bituminous cement filler, heated until it will run freely into the joints. Expansion joints are left between the curb and the paving blocks $\frac{3}{4}$ inch to 1 inch wide, and these also are filled with the bituminous filler. Immediately thereafter a $\frac{1}{2}$ -inch layer of clean, very coarse, dry sand, or a layer of clean, hard, dry crushed stone screenings with particles from $\frac{1}{32}$ to $\frac{1}{4}$ -inch in size, is spread over the entire pavement and is allowed to remain for at least a month while traffic passes over the pavement.

The wood blocks called for are of long leaf yellow pine, free from large knots, coarse grain, or other defects. Other woods, such as Oregon or Washington

Douglas fir, equal or superior to long leaf pine, may be used if the engineer approve; but only one kind of wood is to be used on the same street or contract. All blocks shall have uniform dimensions with no variation greater than 1/16 of an inch, the length being between 6 and 10 inches, the width between 3 and 4 inches, but all blocks used in a given street or contract must be of the same width and depth. Each treated block must contain at least 18 pounds of creosote oil per cubic foot of wood; except that, if a block contains so much natural pitch as to prevent injecting this amount, it shall receive all the creosote which can be forced into it under a treatment which would give 18 pounds of creosote to ordinary blocks of the same kind, and shall contain at least 19 pounds of combined creosote and natural pitch.

The creosote is to be a dead oil or coal tar containing not more than 3 per cent. of water and only traces of acetic acid and acetates. Its specific gravity at 100 deg. Fahr. shall be between 1.03 and 1.10. It shall not leave more than a trace of residue on a filter paper when filtered between 60 and 77 deg. Fahr. It shall contain about 25 per cent. of crystalizable naphthalene and at least 15 per cent. anthracene oils, and at least 95 per cent. shall be soluble in carbon bisulphide and equally in absolute alcohol.

Before injecting the creosote, all blocks are to be sterilized by dry steam under a pressure of 30 to 50 pounds per square inch during at least three hours, the temperature within the cylinder during steaming being between 250 and 280 deg. Fahr. All sap and other liquid matter and steam shall then be removed from the cylinder and as quickly as possible a vacuum shall be created of at least 24 inches and maintained until moisture and gases cease to come from the cylinder, the blocks being kept hot meantime by steam coils. While the blocks are still under vacuum, creosote oil is to be run into the cylinder at a temperature of between 180 deg. and 200 deg. Fahr., this being sufficient in intensity and duration to cause the blocks to absorb the amount of creosote stated above.

The blocks, when ready for use, are to absorb not more than 4½ per cent. of their dry weight of water, this being determined by heating at 100 deg. Fahr. for twelve hours and then immersing in water for twelve hours. They must also meet an indentation pressure test made as follows: The blocks to be tested are first dried at 100 deg. Fahr. during twelve hours. Then a polished steel die of one square inch on its lower face with square edges, corners and perpendicular sides is placed on a dried block, firmly supported in a compression testing machine. A pressure of 8,000 pounds is applied quickly and maintained exactly one minute. The die must not descend and indent the block more than one-eighth of an inch. The measurements are to be taken from when the die is lightly pressed against the block to the instant the 8,000 pounds pressure has been applied one minute. The die is placed anywhere within one-half inch of the edges of the block and so as to compress lengthwise the wood fibers.

WOOD BLOCK PAVING IN NEW YORK

The committee of the Market Street Merchants' Protective Association, of Philadelphia, was appointed last February to investigate the wood block pavements of New York with a view to considering their adoption for that Philadelphia thoroughfare. It has recently reported to the association that it found that more than thirty streets in New York were paved with wood block from two to six years ago, most of these being streets of the heaviest traffic, some having grades as high as 10 and 12 per cent. It did not find that these streets were at all slippery, but learned that in many instances teamsters drove three or four blocks out of their way to use them. Its inspection was confined to a part of one day, but it questioned a number of teamsters as to their opinions of wood paving, and these are reported to have been favorable in all cases.

The committee recited at considerable length the conditions found on all the various streets and bridges where this paving was examined, and stated that they failed to discover any sections of this kind of pavement which had disintegrated or which appeared to be in any but excellent condition. As a result of this examination they recommended that the association strongly urge the adoption of this material for the paving of Market street. Most of the New York paving was done by the U. S. Wood Preserving Company and has been placed chiefly upon streets of heavy travel in the business district, and upon bridges of recent construction. All of this pavement was laid with thoroughly creosoted wood blocks, and is apparently free from either decay or swelling.

Following this report City Councils acceded to the request of the Merchants' Association, but the matter does not seem to have been finally settled yet.

INVERTED SEWER SIPHON

THE accompanying drawing illustrates a rather unique piece of sewer work, designed by Mr. C. D. Hill, Chief Engineer of the Sewer Department of the Board of Local Improvements of the City of Chicago, to carry the Kedzie avenue sewer under the Illinois and Michigan Canal.

The Kedzie avenue sewer is a 9-foot circular brick sewer, being built to serve the rapidly growing southwestern section of the city. It empties directly into the drainage canal. The Illinois and Michigan Canal runs parallel to the drainage canal and about 900 feet from it. The problem confronting the engineers was to provide means for carrying the sewage under the canal in such a manner that during the dry weather flow there would be no serious deposit in the siphon and so that the storm water flow would be readily handled. It is estimated that the dry weather flow in the sewer will be from 20 to 30 cubic feet per second, while the storm water flow may reach 250 cubic feet per second, which is under the estimated maximum carrying capacity of the 9-foot sewer. It was feared that, if the 9-foot sewer were carried under the canal,



OVERFLOW OF SIPHON INTO ILLINOIS AND MICHIGAN CANAL

the small velocity of the dry weather flow, calculated to be one foot per second, would result in considerable deposit. A further consideration in the matter was that this canal is not a particularly clean stream, and that the discharge of greatly diluted sewage into it in time of flood would not seriously pollute it. A design was therefore worked out which would keep the siphon clean during dry weather flow and permit the discharge of excessive storm water into the canal, although lesser amounts will easily be carried through the siphon.

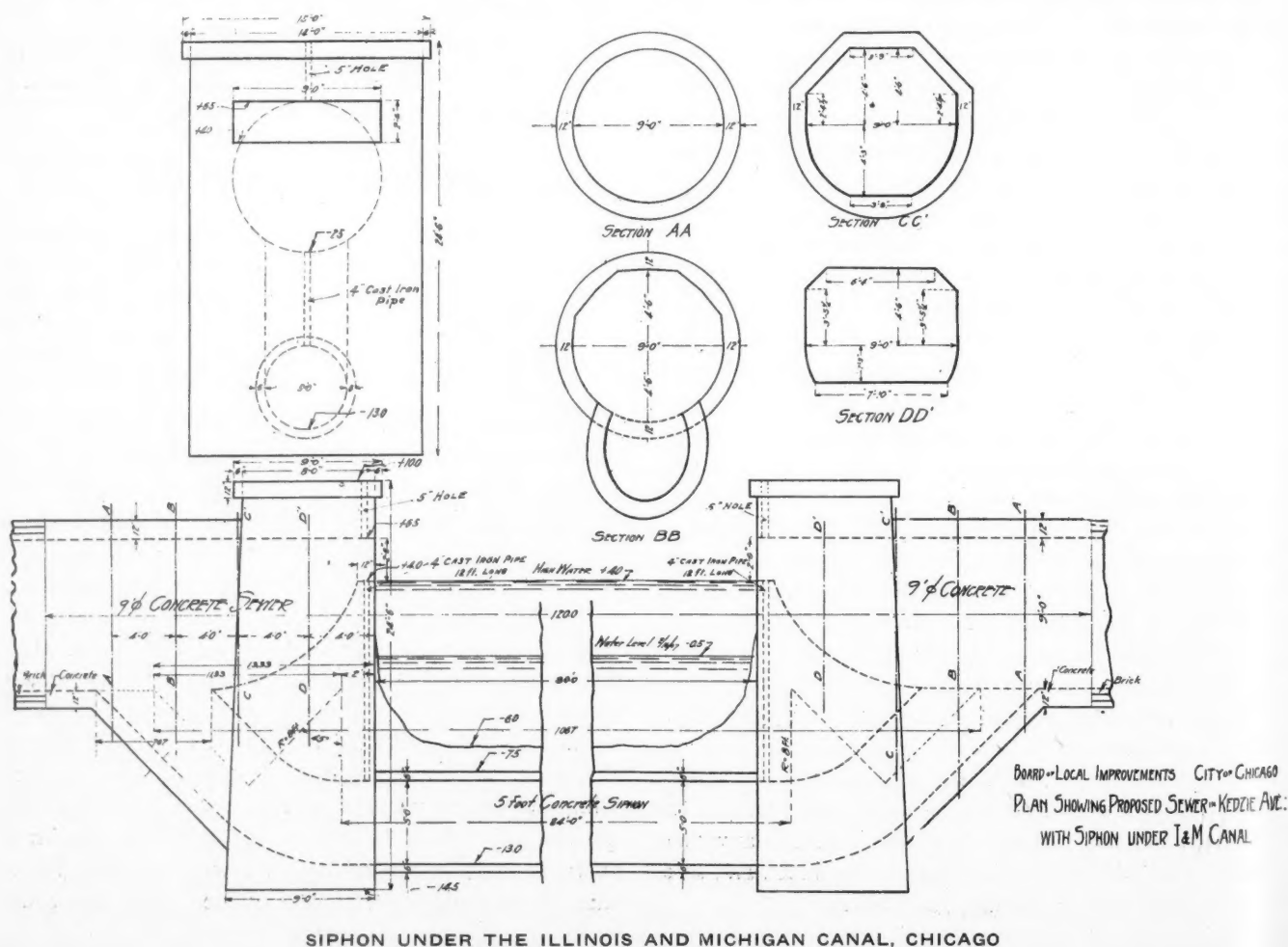
As will be seen from the drawing, both the inlet and outlet to the siphon are 9 feet in diameter, while the siphon itself is 5 feet in diameter. The capacity of the siphon is therefore about one-fourth that of the rest of the sewer. Allowance is made for the creation of a

head on the inlet side, which increases the velocity through the siphon and gives the scouring action necessary to keep it clean. Of course, the greater the flow the greater will be the head and the greater the scouring action.

Provision is made at each end of the siphon for overflowing into the canal through a grated chamber.

While the sewer is of brick, the siphon, canal headings and the sewer for 20 feet each side of the siphon are built of concrete. The siphon itself has a rather thin shell, only 6 inches, because the pressure is not at any time very great. At times of greatest flow the internal and external pressures will be practically equal. If at some future time the canal should be abandoned, as is probable, it will be an easy matter to make a straight 9-foot sewer and cut out the siphon.

In constructing the siphon double wooden sheeting with puddled clay between was driven to form a cofferdam half-way across the canal. A centrifugal pump kept this free of water and little difficulty was experienced in the construction, especially on the first half, which was built in the fall of 1908. The construction of the other half, which was built this spring, was rendered more difficult by leaks, but nothing serious developed. After the siphon was completed a few small leaks were found, and at these points a section was cut out and refilled with a mixture of cement and plaster of paris, which made a quick setting, tight joint that was entirely satisfactory.



SIPHON UNDER THE ILLINOIS AND MICHIGAN CANAL, CHICAGO

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Revising Street Grades in Altoona

Altoona, Pa.—City Engineer Franz Engstrom is revising the grades throughout the city as rapidly as possible, keeping one corps of engineers on the task most of the time. As fast as permanent grades are established, ordinances are prepared and submitted to Council for approval. For years very little attention was paid to grades as buildings were erected, with the result that when it came to making permanent improvements there was frequently a different grade in front of each property on a block. In revising the grades the position of valuable improvements is considered.

Likes Granitoid Pavement

Bay City, Mich.—Former City Engineer H. C. Thompson, who visited Chicago with a party of city officials to inspect pavements, says: "In Chicago we saw streets where granitoid had laid 12 years without a cent of repairs. The grooving, which prevents slipping, was less than one-fourth inch deep when the pavement was laid, and the ridges had not worn down in 12 years of fairly hard traffic. Brick, as every one knows, wears unevenly, because it is impossible to burn each brick exactly alike. For that reason our brick pavements all wear depressions, and in a few years, while still good pavements, have rough surfaces. The granitoid is exactly the same all the way through, and it wears evenly. This wear is less than on brick. The 12 years of service on the Chicago pavements made practically no impression. There is practically nothing in the way of dust, etc., and all the cleaning that is done is to flush the pavement occasionally. In fact, they told us rain did most of the cleaning. It's a clean pavement."

Maryland Commission Has Selected All State Roads

Baltimore, Md.—The State Roads Commission ended the first year of its official existence April 30. Under the terms of an act authorizing a loan of \$5,000,000 all of the routes included in the State system of highways have been selected—1,000 miles in all. The roads are now the property of the State and will be maintained by it. All toll gates have been abolished. While the Commission has been engaged in selecting the roads, the engineering corps, under Chief Engineer Crosby, have made the surveys. As a result all of the Eastern Shore counties and several of the Western Shore are ready for the road builders as soon as the contracts have been let.

At a recent meeting of the Highway Commission and Road Supervisors of Baltimore County, Dr. Charles L. Mattfeldt, one of the Highway Commissioners, wrote off the following prescription for good roads:

Good stone,
On good grades,
Over good base,
Dry and well packed,
Rolled and rolled
Oiled or tarred,
And properly drained,
Dustless and waterproof—
Success will follow.

It will be noticed that the letters forming the beginning of each line spell "good roads."

Ohio Interested in Good Roads

Columbus, O.—Nearly every county in the State is displaying a most eager interest to assist State Highway Commissioner J. C. Wonders in his effort to improve the roadways of the State and especially those which lead into the different county seats and are known as "trade roads." In many of the counties fully \$100,000 will be added to the \$5,500 which the State gives, and all will go into this work. Commissioner Wonders is happily surprised at the interest shown, and declares that within a few years Ohio will have the finest system of public highways in the world.

City Cannot Alter Names of Private Streets

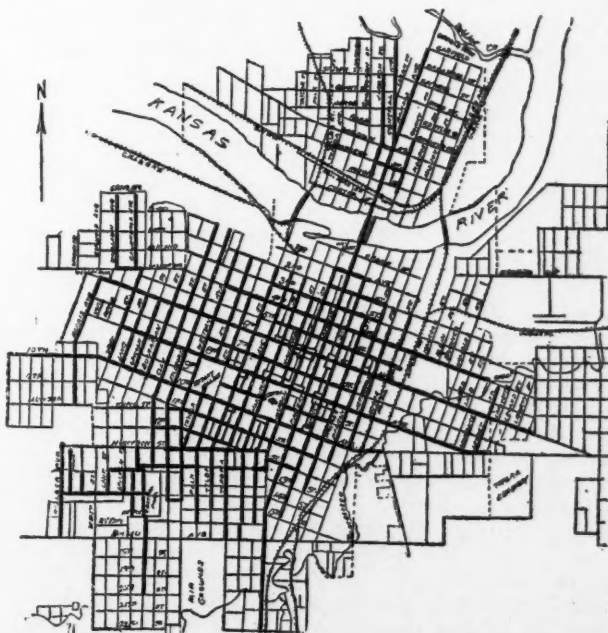
Baltimore, Md.—City Solicitor Poe has given his opinion to the Commissioners for Street Opening that the city has no right to alter the names of private streets. The opinion, according to the Commissioners for Opening Streets, renders in a large measure useless the work done last year by Judge Brune of the Appeal Tax Court, at a cost of about \$1,000, in eliminating about 1,400 street name duplications. What is more to the point, in the minds of the Commission, is the fact that the opinion practically relegates the city to the confusion under which it has labored. Henceforth, according to the opinion, John Jones can open 50 private streets, and, with a perverted sense of humor, name each of the 50 "Baltimore street." Mr. Poe declares that the city has no jurisdiction over such whims. In the absence of the present opinion which the City Solicitor has rendered, Judge Brune approached the task without regard to whether the streets were public or private, and to render his work in any degree effective it will be necessary to search out the title of every street affected—a task likely to involve many times the cost of Judge Brune's work.

Testing Durability of Wood and Concrete Crossings

Tuscaloosa, Ala.—The city has accepted a proposition from the Tuscaloosa Concrete Company to lay a concrete crossing anywhere in the city limits at the cost of a wooden crossing for the purpose of testing the relative durability of their material.

Topeka's Paving Record

Topeka, Kan.—Five hundred and twenty-six blocks, a little more than 51 miles of paving, is the record Topeka will establish as soon as the present contracts are completed. This amounts to one mile of paving for every thousand inhabitants in the city—an unusual record. Of this paving 40.04 miles is brick, 6.45 asphalt, 2.40 sandstone, 2 macadam, .67 limestone and .06 cedar blocks. Alongside part of this paving are 25 miles of curb and gutter. The paving, when this year's work is completed, will have cost \$2,500,000. The longest as well as nicest stretch of paving is on Kansas avenue, extending three miles from the south to the north limit. Sixth avenue extending from east to west is the second largest straight stretch. Mayor William Green, who has been in office ten years, and is now entering a second term, is a great advocate of paving and parks.



PLAN SHOWING PAVED STREETS OF TOPEKA, KAN.

Wear of Automobiles on Roads Recorded by Cameras

Washington, D. C.—Under the direction of Logan Waller Page, Director of the Office of Public Roads, a section of the Conduit road was shut off from traffic to provide a field for a series of experiments on the effect of automobiles on oiled roads during which observations were made by means of cameras. The Conduit road is an ordinary macadam highway. After the tests there were completed a similar series of experiments was completed on the Speedway where the surface has been oiled. At the first camera station the cars were run at full speed under power. At a point further on the car was photographed coasting under its own momentum. The cameras were 50 yards apart and midway between them was a moving-picture machine.

Part of Boulevard Sold

Indianapolis, Ind.—The Sheriff recently sold a section of the Fall Creek boulevard to Alexander Chambers, receiver for the City Bond Company, for \$681, to satisfy a street improvement lien and court costs. As the result of this sale the City of Indianapolis no longer owns the boulevard property between Capitol avenue and Illinois street. However, carriages and automobiles will still be allowed to run over the boulevard, as the law gives the city a year in which to redeem the property, and, meanwhile, its private owner cannot disturb it.

Adopts Plans of Art League

Montclair, N. J.—Two of the propositions urged by the Montclair Municipal Art Commission, as outlined through the report of that body's landscape expert, John Nolen, of Boston, Mass., have now become realities. One was that a Shade Tree Commission be appointed by Council to look out for the interests of Montclair's trees in streets and parks. The other suggestion was that all streets be macadamized from curb to curb instead of a narrow strip in the center of the thoroughfares, as has been the custom. The propositions were brought up at the meeting of the Montclair Town Council and both were acted upon favorably. The Mayor chose as the first Commission, to serve without pay, Seth Sprague Terry, Arthur Underhill and Henry Wrensch, Sr.

Sidewalk Guarantees to be Enforced

Syracuse, N. Y.—Following the study of a report submitted to him by Sidewalk Inspector Morris Jones, City Engineer Henry C. Allen gave orders to enforce the provisions of the five-year guarantee bond of every contractor whose walks had not withstood the required test of time. Each contractor is given thirty days in which to repair the walks. Failure to comply with the requirements of the City Engineer will be construed as intention to ignore the order, whereupon the city will declare the contract in default and proceed to collect upon the guarantee bond.

Waste Product From Oil Wells Used For Roads

Visalia, Cal.—Two hundred tons of rich black oil sand from the Sunset wells will be used on some of the roads of Tulare county this summer. Superintendent Twaddle, chairman of the county governing board, has been experimenting and found it satisfactory. The sand comes from the wells mixed with the oil. When this flows into the sump hole the sand sinks to the bottom and separates itself, the oil running off. Gradually the sand piles up around the derricks, and at the mouth of the pipe, and fills a large part of the sump. There are piles 40 feet deep on the Adeline, Maricopa Road, Oil and Gate City properties, which have accumulated in the course of four or five years. The sand coming with this heavy oil is different from that found with the light oils, even that with the Kern River product. Those who have tried it say it is superior for roads to any common sand that may be mixed with oil. It has a binding quality that is lacking in artificial products. Before its adoption in Tulare county, it was used quite a little on highways in the immediate vicinity of the oil fields, it being given away to whoever would load and haul it away. A wide use of this by-product by roadmakers will be a boon to the heavy oil producers of Sunset, by ridding them of a nuisance and transforming it into a source of revenue.

City May Pay Cash for Paving

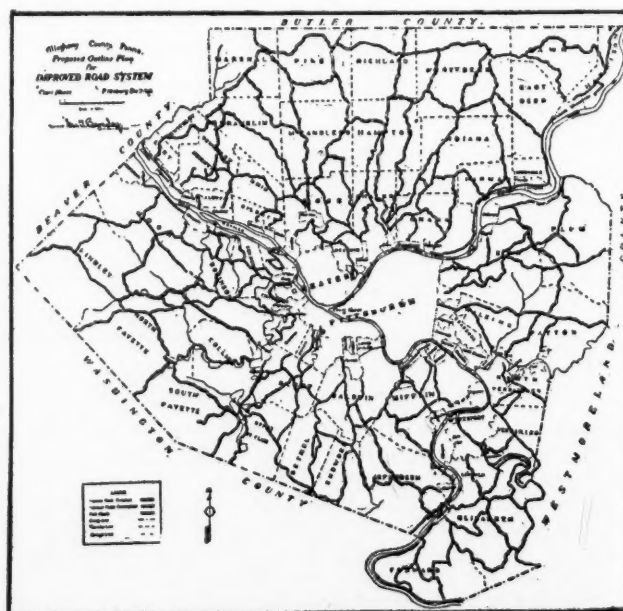
Knoxville, Tenn.—The city may pay cash for all of the paving done in Knoxville this year, which, it is estimated, would result in a saving to the city and the taxpayers of more than 10 per cent. Under the present law the city must issue bonds for the abutting property owners' part, and only the lots are behind these bonds, instead of the entire city, which makes them harder to dispose of than if they were city bonds. A bill has been prepared and will be presented to the Legislature for passage amending the abutting property law so that the city, if it is going to do \$100,000 worth of paving for property owners' part, can issue bonds and pay cash to the contractors instead of making them take the paving bonds on the abutting property that run one, two, three, four and five years. The property owners would pay the two-thirds into the office of the Comptroller, and this money would be placed in a sinking fund to retire the bonds as they fall due. The amendment to the act of 1902 has been drafted and will be sent to the Legislature for passage.

Can Repair Pavements, if Not Lay New Ones

Terre Haute, Ind.—The Board of Public Works, now that it has decided not to do any street paving this year owing to the provisions of the new Thornton law, is getting after the contractors whose street paving in the last year or two has been faulty. Following an order that one street be resurfaced, the City Engineer reporting that nothing in the way of repairs less than resurfacing will suffice, comes an order to another contractor to put another street, which was only recently paved, in good condition. All paving contractors give a bond to guarantee good condition for five years.

Giant Boulevard System Around Pittsburg

Pittsburg, Pa.—A great system of boulevards, gridironing the entire county with its wide bands of smooth macadam and connecting all the main arteries of road travel, is the ultimate aim and purpose of the County Commissioners and County Road Engineer George T. Barnsley. It is planned to have the best roads in the United States in Allegheny County. Already 300 miles of road have been completed under direction of Engineer Barnsley, and the improvement of 50 additional miles is now under contemplation, while 20 miles remain unfinished from last year. The Grand Jury on one day approved the letting of contracts for 12 different portions of road throughout the county. As much work as is possible under a bond issue of \$1,000,000 will be done this year. Engineer Barnsley said the suggested development to complete the main arteries and connections approximate 300 additional miles, or a total exceeding 600 miles. After the ground work is completed future improvement would then be guided by the importance and need, as influenced by local conditions.



RADIAL AND CIRCUMFERENTIAL ROAD PLAN

SEWERAGE AND SANITATION

Advises Semi-Annual Clean-up

Augusta, Ga.—Dr. E. E. Murphy, President of the Board of Health, says that the inspectors are not finding as much dirt and filth during the spring clean-up as they had found in the past, this having been made possible by the fact that the city was thoroughly cleansed after the flood last August. Dr. Murphy believes that it would be a good idea to give the city semi-annual cleanings instead of the annual, as is done at present. This would keep the work better in hand, and the inspector would be better able to manage it.

Pump Station Tie Up Ends

Baltimore, Md.—Following an opinion of City Solicitor Poe, relieving Building Inspector Preston of responsibility for the safety of the sewage pumping station and its foundations, about which the Building Inspector and the Sewerage Commission have been at odds so long, with a resulting expensive tie up of work, operations have been resumed on the foundations in accordance with the original plans of the Sewerage Commission.

Chicago to Abate Smoke in Harbor

Chicago, Ill.—At a meeting between the Smoke Abatement Commission, the Advisory Board of Engineers and Smoke Inspector Bird it was decided that a conference with the interests using the harbor would be advisable as a first step in the crusade against smoke on the river. Tug boat men especially will be asked to do their share in putting in smoke reducers and consumers, and all steamship owners and shippers will be informed of what the commission hopes to accomplish and will be asked to co-operate.

Rabies Prevalent in Chicago

Chicago, Ill.—The Director of the Laboratory of the Department of Public Health calls attention to the prevalence of hydrophobia among dogs in Chicago, and urgently advises the rigid enforcement of the ordinance requiring the muzzling of all dogs running at large. During the last two months the laboratory has examined an average of one supposedly mad dog each day. Notwithstanding the oft-repeated advice of the Department to confine the suspected mad dog and watch it for a week or so, the unfortunate practice of killing the animal at once still continues. If the dog is killed in the early stages of the disease, as is frequently the case, the post-mortem examinations or animal inoculations do not always demonstrate the presence of the disease, and furthermore the usual plan of shooting a dog in the head renders examination extremely difficult owing to the destruction or mutilation of the brain. The proper procedure is to lock the dog up and watch developments. If the animal has hydrophobia he will die within two weeks. Then the carcass should be brought to the laboratory for examination. The Department advises that the Pasteur treatment be immediately resorted to by any one bitten by a dog showing signs of rabies.

Discharge of Gas House Refuse Enjoined

Long Branch, N. J.—A mandatory injunction has been issued by the Court of Chancery against the Consolidated Gas Company of New Jersey in the suit brought by the Long Branch Board of Health and the Shrewsbury River Property Owners' Association. The injunction allows the gas company fifty days to reconstruct its premises in such a way as to stop the flow of tar or oil from the ground into the Shrewsbury river, but all refuse from pipes must at once be diverted by the gas company from the river and drained into the sewer. The case is one of long standing and has been stubbornly fought in the courts. It is likely that it will be appealed.

Plan Improvement on Health Rules

Urbana, Ill.—Elaborate plans for the improvement of health regulations in Illinois were proposed at a conference on public health at the University of Illinois. Illinois was pictured as far behind the times in protecting its people. President Webster, of the State Board of Health, advocated a commission by the State to investigate other States and this was unanimously approved. T. J. Burrill read a bill to be introduced in the Legislature providing for the establishing of a school of sanitary science in the university. An annual conference of health officers was decided on and provision was made for their instruction.

PURE FOOD IN FOUR CITIES

Reading Milk Dealers Will Fight New Ordinance—Protection of Meats and Food from Dust—Two New Laws

Reading, Pa.—The milk dealers have decided to fight the meat and milk ordinance. They will refuse to apply for licenses, claiming that the fee of \$10 is excessive. They also object to the inspection of premises outside of the city. Inspector Fetherolf has issued many licenses to butchers and poultry dealers, but few milk men have applied.

Dallas, Tex.—Dr. Landon C. Moore, recently appointed City Chemist, will frame an ordinance covering the regulations concerning pure foods and inspections of dairies, shops and stores.

Knoxville, Tenn.—Dr. William G. Shaw has been appointed Inspector of Meats under the new ordinance requiring all meats to be stamped. It is estimated that the fees derived from the inspection will more than pay the expenses of the office.

Washington, D. C.—Health Officer William C. Woodward has recommended that the transportation of meats and similar foods through the streets of the city be prohibited unless they are properly wrapped and protected from the dust. This provision will be incorporated in the ordinance forbidding the exposure of meat, etc., for sale unless protected from dirt.

WATER SUPPLY

Cleveland May Reduce Its Minimum Rate

Cleveland, O.—The first definite step for reduction of water rates has been taken by council. A resolution by Councilman Pelcinski, requesting the Service Board to reduce the minimum rate from \$2.50 to \$1.25 to all consumers using 2,000 cubic feet of water or less, was adopted. If the change in rates is put into effect, 10,000 families will be benefited.

Pittsburg Filtration Plant Inadequate

Pittsburg, Pa.—Mayor Magee, after an inquiry into the condition of the water filtration plant, says that even with the completion of the ten beds now under construction the plant will be inadequate and that \$2,000,000 will be required to finish it. Either 14 more filter beds or a system of preliminary filtration will be required. A. B. Shepherd, Superintendent of the Bureau of Water Supply is making experiments which will not be concluded until next October to determine which of the two plans is the better.

Water Tank Bursts

Manassas, Va., April 30.—The large water tank of the Southern Railway Company burst April 30, and one hundred thousand gallons of water were poured over the adjacent territory. The office of W. E. Howard, the agent of the railway company which stood close to the tank was reduced to splinters. Telegraph wires were snapped and a telegraph pole standing thirty feet away was pushed out of position by the force of the water. A portable iron blacksmith's forge was forced through a stable, wrecking one end of the building. A loaded freight car standing on the siding near the tank was derailed. The disaster was caused by the snapping of one of the iron hoops which encircled the tank. The loss to property will reach \$1,500. Fortunately no one was about the tank when it burst.

Many City Wells Condemned

McKeesport, Pa.—"Sewer water is luxurious in comparison with much of the well water of McKeesport" is the summing up of Dr. A. G. Sandblad, City Bacteriologist, after making exhaustive examinations of the wells in McKeesport. As a result of his work many wells have been condemned. In the center of the city the conditions were found to be particularly bad.

Water Main May Burn Out

Scranton, Pa.—Members of Council from South Scranton are discussing the possibilities of a deluge in that region through a break in the big water main of the Scranton Gas and Water Company, which taps Lake Scranton and then extends through a tunnel down the mountainside and through portions of South Scranton to South Washington avenue. The possible break which these Councilmen fear is at a point where the pipe runs through a burning culm bank at the top of the hill.

BIG LEAKS IN WATER MAINS

Flush Tanks in Norfolk Waste 5,000 Gallons per Day Each —Pitometer Squad Makes Discovery at Washington

Norfolk, Va.—The result of a recent inspection of the sewer flush tanks in the six old wards of the city is a saving of nearly 1,500,000 gallons of water per quarter, this quantity having been wasted heretofore on account of defective arrangement of the fixtures. At the direction of the Board of Control, Chief Clerk Reid, of the Water Department, has just completed an inspection of the 314 flush tanks in the city, and out of this number 93 were found to be consuming more water than necessary, some of them using over 5,000 gallons per day in excess of the quantity needed. Twenty of these tanks were discovered entirely without water. These defects have been corrected by the Water Department.

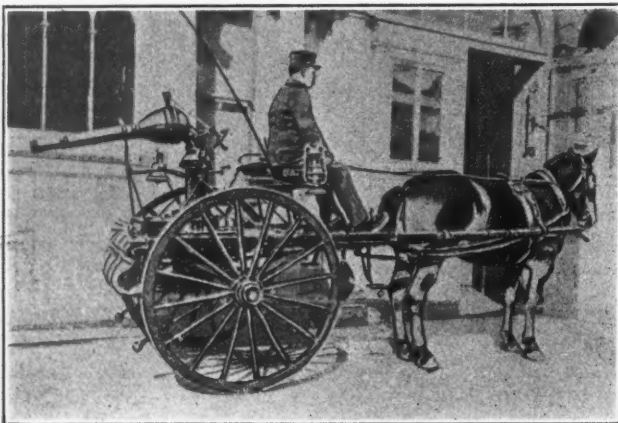
Washington, D. C.—A leak in the water mains in the Capitol grounds, amounting to 737,000 gallons a day, has been discovered by the Pitometer squad of the Water Department. At the lowest rates this water amounts to nearly \$11,000 a year and at ordinary meter rates to four times that amount. The water found its way into a sewer and there were no surface indications of a break. A wide-open three-inch valve was found on a 12-inch main.

Croton Reservoirs Full

New York, N. Y.—More water has been going to waste recently over the Croton dam than the city uses. Because of the recent heavy rains, all but two of the great reservoirs of the Croton system are filled to overflowing, and the spillway to the Hudson is filled to a depth of seven inches. This flood represents a bulk of something like 600,000,000 gallons a day. This is 100,000,000 gallons more than the entire city uses daily. The Croton system supplies Manhattan and the Bronx. The rest of the city supply comes from other sources. Of the 500,000,000 gallons used by the entire city, the Croton system yields 320,000,000 gallons per day for the purposes of Manhattan and the Bronx. The Croton reservoir system is capable of impounding 88,000,000,000 gallons. It has been suggested by W. B. Ellison, formerly Commissioner of Water Supply, Gas and Electricity, that some of the surplus water could be used to advantage in Long Island City. The expense, he says, of laying a pipe under the river, connecting the systems of Manhattan and Queens would not be unreasonable.

Battery For High-Pressure Service

Newark, N. J.—If the necessary appropriation is made for the purchasing of one or more "batteries," as recommended by Chief William C. Astley, of the Newark Fire Department, the city will have an apparatus capable of throwing a two and one-half-inch stream a height of 250 feet. The "batteries" not only have an advantage over engines minus such apparatus for high-pressure service, but they are small enough in dimensions to be stationed in places where there is not room enough for the passage of an engine or truck. As many as six engines can be attached by hose to one "battery." The value of this little fire fighter has been proved in several large cities.



BATTERY FOR HIGH PRESSURE FIRE SERVICE.
Courtesy of the Sunday Call, Newark, N. J.

Frontage Tax on Streets with Water Mains

Geneva, N. Y.—Mayor A. P. Rose is taking the initiative in a plan which has for its end the increasing of the revenue of the city. As proposed the plan is to levy a frontage tax upon all streets having water mains. The theory of the tax is that there is considerable property in the city which pays no water assessment yet enjoys the fire protection that the water system affords. This property, Mayor Rose holds, should pay something into the funds of the city. In other words, his plans propose an increase in the receipts of the Water Department without a general increase in the rates to water consumers.

Niagara Ice Gorge Caused Shortage in Water

Syracuse, N. Y.—Facing a water famine of serious proportions Superintendent George H. Beebe, of the Bureau of Water, is considering a plan for the enforcement of restrictions in the use of the city water. The need of immediate action was decided upon when it was found that the rapidly reducing level in the Woodland reservoir had seriously affected the pressure on the mains and fire hydrants in the higher parts of the city and particularly in the eastern section. The shortage is due to the extraordinary consumption of water by the Rapid Transit Company and the Syracuse Lighting Company, occasioned by their failure to receive Niagara power. The ice jam in the Niagara River below the Falls was responsible for this. For some time both of these companies have been cut off from the power houses at the Falls, being required to operate their own plants here to full capacity. The plants together are using 1,500,000 gallons of water every twenty-four hours. Because the normal demand of the city is fully 13,000,000 gallons of water daily, the total capacity of the single-feed conduit now in operation between Skaneateles lake and the reservoir, all of this special consumption is drawn against the reserve.

STREET LIGHTING AND POWER

Boston Contracts for 3,000 Magnetite Lamps

Boston, Mass.—After an exhaustive consideration of the possibilities of street lighting by gas and electricity, Mayor George A. Hibbard has signed a contract with the Edison Electric Illuminating Company for supplying 3,500 arc lights for a term of five years. Three thousand of the lamps will be magnetite arcs, and 500 enclosed Gilberts. The magnetite lamps will cost \$103.54 a year, the Gilberts, \$92.39. Up to the present time the city has been paying \$118 a year for the Gilbert lamps, no magnetites being provided for in the old arrangement. The electric company has, however, maintained a circuit of the magnetite lamps in Copley square for exhibition and testing purposes. The gas company has maintained an exhibit of a comparatively new Graetzin lamp of high candle power, which it expects may also be used for street lighting.

Lighting Company Leaves City in Darkness

Bucyrus, O.—Bucyrus was in darkness May 3, the electric light company having refused to furnish light without a new contract. The old contract expired the day before, and the works were shut down. Some months ago a new contract was made with a new company, but the new plant has not been started. The old company refuses to light the city unless it gets a contract for services performed pending the starting of the new plant.

All Arc Lights Shut Off On Account of Storm

Knoxville, Tenn.—On account of a severe storm, April 30, telephone and electric wire lines were so broken and crossed that it was necessary to shut current off from all the arc light circuits in the city. Every available lineman was put to work and by 9.30 the next night all circuits but two were in operation.

Slot Meters' Use to be Limited

Seattle, Wash.—H. R. Clise, secretary of the Seattle Lighting Company, has been delegated by the corporations committee of the City Council to take in charge and draft a proposed ordinance that will prohibit, after six months, the use of slot gas meters in hotels, lodging houses and apartment houses, where one meter serves more than one private room or one private apartment or suite.

Market Street, Philadelphia, to Outshine all Others

Philadelphia, Pa.—New York's White Way will not compare with Market street, according to Chief McLaughlin, of the Electrical Bureau, when the lighting plans for the thoroughfare have been carried out. In addition to big duplex lights which will line the center and each side of the street, most of the business men are joining in the illumination. All kinds of mammoth electric signs, some of them containing as many as 1,500 incandescent lights, will be erected. Designs and plans for scores of signs have been submitted to the Bureau for approval. Chief McLaughlin believes that when the effects of the illumination on Market street are seen, there will be a demand for similar installations on other streets.

Trying to Figure Cost of Lighting

Newark, N. J.—The lighting committee of the Common Council is endeavoring to determine whether the electric lighting plant at City Hall saves money for the city. Auditor Forman had studied the problem and in a report has expressed doubt whether the city was profiting any from the installation of the plant. Alderman Biertuempfel contended that owing to the lack of certain indicators at the plant it was impossible for Mr. Forman or any one else to figure out the relative cost of lighting the hall now and formerly. It was shown that very bad coal had been used, and this led Alderman Whitfield to express the opinion that the city could not run a lighting plant economically. It would get poor supplies and employ unnecessary men. City Counsel Nugent was of the same mind.

Would Save Power Sites

Washington, D. C.—Secretary Ballinger of the Interior Department has instructed the Director of the Geological Survey to investigate power sites under the public domain outside of national forests, which are not included in withdrawals for reclamation purposes, with a view to securing at the next session of Congress legislation to control and regulate their disposition. The Secretary said the purpose of this order was to conserve and secure the proper development of the water power resources of the public domain through appropriate legislation. The statement was made also that the Secretary was extremely anxious to prevent these natural resources from passing under the control of monopolistic or speculative interests.

FIRE AND POLICE**Theaters Must Furnish Firemen**

Chicago, Ill.—The custom of stationing city firemen in theaters, begun following the Iroquois theater fire, is to be discontinued, according to the terms of a pending ordinance, which has the backing of Fire Marshal M. J. Horan and Building Commissioner Campbell. Each theater as a substitute will be required to employ two men, one as stage fireman and the other as fire guard in the auditorium, whose duties will be to be on guard against fire and panic during performances. During this time they will be subject to orders of the fire marshal, although they will be permitted to do other work when no performance is in progress.

Holds Record for Continuous Service

Eaton, O.—With a record of twenty years' continuous service in the city's employ as janitor at the city building and driver of the local fire wagon, Henry Taylor, aged 64, was granted a 30 days' leave of absence with full pay. Taylor has been off duty but once in 20 years and then for only two hours. He has during this entire time slept at the engine house. He says he has never been outside of the county's limits.

Fireman Invents Nozzle Holder

Lockport, N. Y.—A nozzle holder has been invented by Hanford Owen, a regular fireman of the De Witt Clinton hose house in East Lockport. The device consists of three iron legs, on the top of which is the holder in which the nozzle sets. The holder swings on a pivot allowing the nozzle to be elevated and turned in any direction. At a recent trial with a pressure of 95 pounds, one man handled it easily. The apparatus is simple in construction and does not cost much.

Keeps Hydrants in Good Order

Williamsport, Pa.—Fire Chief Stryker has ordered all fire hydrants in the city inspected. Each hydrant will be flushed and greased and put in sound condition. Last fall this same treatment was given each hydrant and during the entire winter not the slightest trouble was experienced. Chief Stryker has decided to have the hydrants gone over regularly every spring and fall.

Denver Fire and Police Alarm Standards

Denver, Col.—David Reed, Superintendent of the Fire and Police Alarm Telegraph, after examination of various methods in use in other cities, reached the conclusion that Denver could do better by designing and making its own posts than by adopting the somewhat clumsy and expensive devices already on the market. With the aid of the Art Commission a new form was evolved, the cost of construction greatly reduced, and the appearance of the streets improved. The heads which carry the alarm boxes are interchangeable, and adjustable as regards position. They are so designed as to be available for single or for double boxes, or for testing posts only. The cables within the posts are self-supporting, so that the service would not be interrupted by fracture of the casing. This was demonstrated when one of them was broken off by a recent runaway on Fifteenth street. Some little difficulty was at first experienced in providing sufficient protection for the internal mechanism, from the weather, but this has now been overcome.

The main business district is provided for by the new system, and further extensions are being made in the neighborhood of Fifteenth street and Cleveland place, and of Eighteenth and Welton streets. The work will be continued from time to time as funds permit, but early attention will probably be given to Fourteenth street, where city poles and wires abound, and where such improvements are greatly needed. The new boxes communicate with both headquarters by underground cables in special galvanized iron tubes, laid, when convenient, in the conduits of the telegraph and telephone companies.

Police Prevent Socialists From Unfurling Red Flags

Detroit, Mich.—The determination of the police that red flags should not be carried by a group of Italian Socialists holding a May day parade resulted in a small riot in East Grand Circus park, just above the heart of the business section on Woodward avenue. When the leaders of the Socialists applied to Police Commissioner Smith for permission to parade they announced their intention to carry red flags. The commissioner forbade this, telling them they might parade and carry United States flags, but that no red flags should be carried in the streets. The Socialists declared that they would carry them without permission. When the paraders gathered at the park in the afternoon, about 200 policemen marched to the scene. When the leaders started to unfurl their red banners the policemen seized them. The Socialists resisted and fought hard to retain them. They were overpowered, however, and their banners seized. Several of the Socialist leaders were taken to headquarters.

Substation Locations

Indianapolis, Ind.—Within a few days 25,000 cards will be distributed to houses, giving the location and telephone numbers of police substations as well as of the central station. There will be 5,000 cards printed for the central station and each of the substations. The card for each station will contain an outline of the boundaries of the district reached by the station, printed in red ink. Inside of the boundary outline will be given the address and telephone numbers of the station. It is also the intention to place the cards on the telephones of groceries and drug stores in each district for the information of the public.



AUTO APPARATUS IN CITY USE

License Numbers Must Be Bright and Clean in Birmingham—New Flying Squadron—Model Auto Patrol

Birmingham, Ala.—Chief of Police George Bodeker has issued instructions to patrolmen to enforce the section of the city code regarding the regulation of automobiles. The principal point to which attention is called is to have the license numbers kept bright and clean. Any chauffeur in the future having a grimy number tag will find a charge other than speeding lodged against him in the police court.

Dallas, Tex.—The Board of Commissioners have passed a resolution reciting that they receive daily requests for public improvements which they cannot personally look into on account of lack of facilities for traveling, and that the construction of the reservoir will require still more of their time; therefore they recommend the Mayor to appoint a committee to purchase a suitable automobile.

Easthampton, Mass.—A petition is being circulated to have the mountain road over Mt. Tom closed to automobiles. Only the west side of the road is in Easthampton, but this is very steep, and when automobiles are met there is always danger for pedestrians and other vehicles.

Richmond, Va.—Chauffeur M. C. Pond, of the Second Police Station, has put the new automobile patrol in such shape that he could, if necessary, live in it. He has attached a small motor to the machinery so as to light the interior; a telephone has been put in, connecting the chauffeur with the officer in charge. When starting out on a trip, Mr. Pond pulls a cord which opens the doors, which are closed automatically after the wagon has passed out.

Fitchburg, Mass.—The city will organize a flying squadron of auto fire apparatus, a duplicate of that in use in Springfield.

Cincinnati, O.—Fire Chief Archibold has a new automobile for his personal use. The Police Department will have a \$5,000 emergency automobile in commission in a month.

Mayor Reviews Full Police Department

Scranton, Pa.—For the first time in nine years every member of the Scranton police force, 94 in all, assembled at the City Hall and were reviewed by Mayor John Von Bergen. Addressing them as "Ladies and Gentlemen"—the force includes three matrons—the Mayor said they were called together for the purpose of impressing on their minds the importance of their duties to the public. He said he expected them to preserve the same high standard during the present administration that had prevailed during the preceding three years.

Jersey City Police Parade, May 29

Jersey City, N. J.—It has been announced by Chief Monahan that the annual police parade will take place Saturday, May 29. Arrangements for this event have not yet been made, but it is expected that upward of 250 of the Jersey "finest" will participate.

Monthly Statement of Employees to Be Made

Lawrence, Mass.—Following the recent investigation of certain municipal departments by the Civil Service Commission and the subsequent revelations that certain police officers were illegally employed, the Civil Service Board has sent out an order that hereafter all local municipal department heads must publish a monthly statement. This statement must contain the names of all those employed in the municipal departments, the amount of wages they receive, and the nature of their employment. The order will go into effect at once.

GOVERNMENT AND FINANCE

Loss of Revenues From Liquor Licenses Not Serious

Birmingham, Ala.—Mayor George B. Ward in his annual message to Council, just before retiring from office, reviews the progress of the city government during his four years of office. Among the interesting facts mentioned was the unexpected way in which the losses of revenue due to the new prohibition law were recouped. A temporary loan of \$175,000 was just made to meet the deficiency. The increase of taxes and licenses made good the loss.

Term of Pennsylvania Mayors May be Extended

Harrisburg, Pa.—The constitutional amendments changing the election system in Pennsylvania having been passed at two successive sessions of the legislature will be submitted to a vote of the people in November. The amendments provide that after the year 1910 all State officers shall be voted for in November of the even numbered years, and the county, city, borough and township officers in November of the odd numbered years. All officers are to serve for four years instead of three, as at present. That there may be no confusion in putting into effect the amendments, should they be approved by the people, a schedule was prepared by the legislature, which extends the terms of those now holding office.

Cleveland, Tenn., Now in the City List

Cleveland, Tenn.—The bill which has passed the Legislature extends the corporate limits of Cleveland and takes in about 2,000 new inhabitants. It is claimed that this will give Cleveland over 8,000 inhabitants, thus putting it in the class of cities included in the United States census bulletins of statistics.

Salaries Are Fixed

Tuscumbia, Ala.—At a special meeting of the City Council at which the new Mayor, N. P. Tompkins, presided, salaries for the various city employees were fixed. The City Clerk was put on a commission basis and his fees fixed, all other employees being put on a strictly salary basis. The Mayor declared his purpose to wage a relentless war against negro women vagrants and to see that the law affecting this class is severely enforced.

National Capitol May Have Mayor

Washington, D. C.—From the fact that the President has not reappointed Commissioner Macfarland to a new term of office for three years, but has allowed him to hold over indefinitely, it is inferred that the President is seriously considering the change in the form of District government, suggested by President Roosevelt, to the last Congress. That recommendation was for a single head of affairs to be known as Mayor or Governor, to be appointed by the President. It was suggested that the Mayor will not be a resident of the District, but that a mayor of some large city, who had been conspicuously successful, might be appointed.

Improved Methods of Handling Correspondence Sought

Washington, D. C.—Improvement in the promptness and efficiency of handling public correspondence and records under the District government is the object of a recommendation made to the Commissioners by Dr. William Tindall, Secretary to the Board. Dr. Tindall recommended that a commission of five be appointed to recommend to the Commissioners, before the annual estimates for the fiscal year 1911 are prepared, any changes in the methods of handling public correspondence and records under the District government with a view to greater promptness and efficiency. The plan has received the approval of all the Commissioners.

REFUSE COLLECTION AND DISPOSAL

Every Day Will Be Clean-up Day

Akron, O.—Mayor Wm. T. Sawyer intends to begin a campaign to prevent again the necessity of a "Clean-up Day" proclamation to get rid of unsightly rubbish. "I will instruct all officers to watch for unsightly spots on their beats," said the Mayor. "I want them to ask property owners to get rid of all rubbish that accumulates. If the officers will do this in the proper way I don't think that a 'Clean-up Day' will be needed next year."

Clean Streets and Village Improvements

Carthage, N. Y.—The Federation of Women's Clubs of Carthage has started a campaign looking toward the better civic improvement of the village. The organization has decided to place about a dozen rubbish cans along State street and near the public buildings and to keep them painted and repaired. The village trustees have promised to regularly empty the contents of the cans. The federation also contemplates the filling and grading of the old cemetery on State street. The ladies have also inaugurated a scheme for a public reading room and library in the future.

Suggestion for Solution of Waste Paper Problem

Washington, D. C.—The Twentieth Century Club has forwarded to the District Commissioners a copy of a resolution requesting the enactment of a police regulation requiring contractors to supply covered receptacles for waste paper and see that workmen deposit in it all lunch and waste papers. Major Richard Sylvester, Superintendent of Police, approves the suggestion, but J. M. Wood, Superintendent of Street Cleaning, says he hopes to solve the whole problem of waste paper without the addition of further regulations.

Estimate for Garbage Disposal Exceeded

Scranton, Pa.—At the first meeting of the new joint appropriations committee, convened to consider the budget for the coming year, it was found that the city's system of refuse collection and disposal was costing more than was expected. Accordingly, at the request of Charles V. Terwilliger, Director of Public Works, the sum of \$10,500 was added to the appropriation.

Preparing Garbage Ordinance

Council Bluffs, Ia.—A garbage ordinance is in course of preparation by City Solicitor Kimball, Chief of Police Richmond, City Physician Tribles, Health Officer Bower and City Scavenger Dobson. The ordinance will probably forbid the hauling of garbage by anyone except the city scavenger.

RAPID TRANSIT

McAdoo Tunnel Extension Approved by Commission

New York, N. Y.—The Public Service Commission has unanimously approved the grant of a franchise to the Hudson & Manhattan Railroad Company for the extension of its line from Sixth avenue and Thirty-third street to the Grand Central Station. Before the franchise becomes effective the approval of the Board of Estimate must also be obtained. Comptroller Metz states that he does not think the Board will object.

Tag Day Fund to Fight Trolley Company

Oakland, Cal.—"Tag Day" to supply funds with which to carry on a campaign against the Oakland Traction Company to compel a reduction of fares to suburban points is the plan of the joint Five-Cent-Fare Committee which includes a number of civic organizations.

Philadelphia Rapid Transit Raises Fare

Philadelphia, Pa.—The Board of Directors of the Philadelphia Rapid Transit Company has announced that the sale of six-for-a-quarter tickets will hereafter be discontinued. This change, it is estimated, will give the company an additional revenue of about \$4,000,000 a year. With this increased revenue the company promises to give better service. A statement to the public says that the average fare during the past nine months has been 3.90 cents. This sum it is said will hardly pay operating expenses. During the past seven years no return on their capital has been made to stockholders who have paid in \$30,000,000. As a compensation for the increase in fare, the company agrees to pay the city its share of dividends as they are earned, instead of having them accumulate for a long period, as was stipulated in the original agreement.

To Stop Riding on Fenders

Seattle, Wash.—Riding on street-car fenders will not be tolerated and, according to the statements of Chief of Police Irving Ward, all persons caught violating that city ordinance will be prosecuted. Official cognizance was taken of the violation of the law two days after the opening of the baseball season. At that time A. V. Bouillon, superintendent of public utilities, in looking from his window in the city hall, saw several Yesler Way cars on their way to the ball park not only packed on the inside, but carrying from five to ten passengers on the rear and front fenders. The services of a photographer were procured and photographs taken of two cars that followed and which were in just the same condition as the preceding ones. The picture was then given to Chief Ward and the order followed. The chief has ordered his men to stop all cars where there is a violation of the ordinance and to arrest the men standing on the fenders.

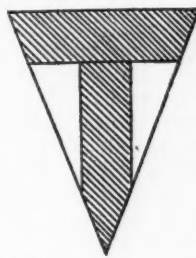
MISCELLANEOUS

Plan Great White Way for Atlantic City

Atlantic City, N. J.—A "White Avenue," making a five-mile-long plaza, that will rank with the Boardwalk in its attractions for visitors is planned by the business men of Atlantic avenue. According to the plans outlined, store fronts, street cars and the new electroliers erected by the city should be painted white with any necessary trimmings in the light blue which makes up the city colors. The Fast Shore Line, which operates the trolleys, has already painted some of its cars in the prescribed colors.

Trenton Flag at Commerce Chamber

Trenton, N. J.—A flag for the city, as adopted by the joint committee representing the Chamber of Commerce, the Merchants' Association and citizens, and designed by



Director Fredericks of the Trenton School of Industrial Arts, has been hung in the Chamber of Commerce Building. The colors chosen for the city are "Jersey blue" and yellow. "Jersey blue" is the color of the uniforms worn by the Jersey Provisional troops in the French and Indian wars about 150 years ago. The design of the Trenton city flag or pennant is the letter "T," placed upon a flag

shield or other form of decoration, the field being bright yellow and the letter "T" being "Jersey blue." The design is thus described: A pale is an honorable ordinary formed by two perpendicular lines drawn from the top to the point of the pennant or lengthwise of the flag. A chief is formed by a horizontal line drawn at right angles to the pale and occupying the upper portion of the flag or pennant.

Massachusetts to Combat Moth Pests

Boston, Mass.—State Forester Rane, Superintendent Worthley and Secretary Bailey of the work on suppressing the browntail and gypsy moths, appeared before the Legislative Committee on Agriculture at the State House to argue for the appropriation of \$150,000 asked for to continue the field work, and the \$15,000 for specific purposes in the fight against the pests. Professor Rane described the effort that is being made to strike a balance between the moths and their parasites and told how in England they have succeeded to such an extent that it is now difficult to find specimens of the gypsy moths. Acting Superintendent Worthley said he has 52 species of parasites, but that to liberate the group of secondary parasites now might cause trouble. Mr. Bailey argued that the absence of the former critics showed that they were convinced that the work should go on and hoped that the mistake of 10 years ago in stopping it would not be repeated.

Mayor to Pass on Advertising

Lawrence, Mass.—Mayor White has sent out notices to the heads of all municipal departments that hereafter any advertising matter in connection with city affairs must receive his acceptance and approval before insertion. "I am doing this," he said, "to cut down expenses in printing. I expect to save about \$5,000 in that line this year."

Favors More Playgrounds

New York, N. Y.—Patrick F. McGowan, president of the board of aldermen, and J. J. Martin, city chamberlain, the committee on playgrounds, reported to the sinking fund commission in favor of the proposal to turn twenty-three acres of the southwestern part of Van Cortlandt Park into athletic fields and playgrounds. It is estimated that the cost will be \$144,000. The report also suggested laying out playgrounds in several other parts of the city, one of them being the space under the Manhattan terminal of the Queensboro Bridge. The report was referred to the park and bridge commissioners.

To Restrict Hiring of Boats to Children

Washington, D. C.—The exercise of authority to restrict the hiring of boats to children under the age of sixteen years has been discussed by Corporation Counsel E. H. Thomas and others. Commissioner Macfarland has recommended that a police regulation controlling the hiring of boats be adopted.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Ruling of Interest to Municipalities

Contractor's Bond—Illegal Contract.

Kansas City Hydraulic Press Brick Co. vs. National Surety Co.—A brick company procured the signing of petitions by property owners for the paving of certain streets and the letting of contracts for the paving by the city on such petitions. The petitions, advertisements for bids, and the contracts all specified a brand of brick made only by the company as material to be used. The contractor bought the brick from the company, used it and the paving was accepted and paid for by the city, but he failed to pay for the brick. Subsequently the Supreme Court of the State decided that contracts let on specifications designating material of a particular manufacturer, when other kinds were available for the work, were illegal and void as in violation of the policy of the statute which required the bids to be competitive. There was no fraud in the transaction, the action of the company was open, and the illegality was apparently not known to the city officers, nor was any objection made by the property owners. Held, in an action against the contractor and the surety on his bond given to secure payment for labor and materials, to recover the price of the brick, that the fact that the company was instrumental in procuring the illegal contracts from the city did not, under the circumstances, constitute a defense to the liability of defendants.—United States Circuit Court of Appeals. F. R. 167, 496.

Taxation—Separate Schools

Crosby et al. vs. City of Mayfield.—Under the Constitution, providing that no taxing district shall be permitted to become indebted to an amount exceeding in any year the income and revenue provided for such year without the assent of two-thirds of the voters thereof, and Section 187, providing that separate schools for white and colored children shall be maintained, the issuance of bonds by a city for the purchase or erection of school buildings for white children and paid by taxes on the property of white people cannot be enjoined because the question of the issuance of such bond was submitted only to the white voters of the city, there being separate schools in the city for the white children under the supervision of a Board of Education and supported by the general tax fund and a special tax on the property of the white people, and separate schools for colored children supported by the general tax fund and a separate tax on the property of colored people. Where the State divides its school fund equally among all the children of the State, white and colored, providing further support for the schools by the taxation of property owned by white persons to be used for the support of schools for white children and taxation of property owned by colored persons for the support of schools for colored children, it does not violate the Constitution of the United States, Amendment 14, by discriminating between the races.—Court of Appeals of Kentucky. S. W. R. 117, 316.

Defective Street—Prejudicial Remarks of Judge

Batdorff vs. Oregon City et al.—Where the complaint in an action against a city and its officers for injuries through a defective sidewalk did not state a cause of action against the officers because alleging that they had the requisite means with which to make the repairs, plaintiff obtaining judgment against the city only was not prejudiced by the remarks of the court that the charter exempting the city from damages for negligence and allowing a recovery only against the officers for gross or willful negligence was unconstitutional as requiring a verdict for the officers.—Supreme Court of Oregon. 100 P. R. 938.

Street Improvement—Reassessment

Morgan et al. vs. City of Portland.—A reassessment for a street improvement cannot be sustained, where neither the ordinance authorizing it nor the records of the Council show that the assessment against the several parcels of land was to the extent of their respective and proportionate shares of the full value of the improvement.—Supreme Court of Oregon. P. R. 100, 657.

Charges Against Police Officers—Sufficiency

People ex rel. Brennan vs. Bingham, Police Commissioner.—Where the Superintendent of the Telegraph and Electrical Service in the Police Department of the city of New York showed a good record for many years, and since he became Superintendent the electrical equipment had enormously increased under his supervision, and the contracts for the laying of the wires were on file in the Police Department, and showed in detail the termini and course of each section of wire, and during his incumbency there had never been an interruption of service in any wire which had not been located and repaired within two hours, the failure of the Superintendent to keep on hand diagrams of the locations of the wires and connections was not ground for his dismissal from the service. The charges against a member of the Police Department of the city of New York to effect his dismissal must be substantial and show some dereliction or neglect of duty, or something affecting his character and fitness for the position.—New York Supreme Court. N. Y. S. 115, 739.

Police Officer—Compensation

McDevitt vs. Mayor, etc., of Jersey City.—The assignment of a police officer to the duties of a higher rank does not entitle him to the pay of that rank, nor, in the absence of a legal contract or an enabling statute, to any extra pay for the increased responsibility and duties of such assignment.—Supreme Court of New Jersey.

Hansen vs. Mayor, etc., of Jersey City.—Plaintiff, as a member of the Police Department of Jersey City, was serving as Detective Sergeant, from which position he was removed and assigned to duty as a patrolman; the salary of the latter position being less than that of the former. He served as patrolman, and was paid the compensation incident to that office, and it being determined, in proceedings instituted by the plaintiff for that purpose, that his transfer from one position to another in the same department of the public service at a lower salary was unlawful, he brought suit to recover the salary incident to his former position for the period of time he served as patrolman. Held, that the money paid him by the city for services as patrolman was properly credited against the amount sought to be recovered.—Supreme Court of New Jersey.

Reduction of Police Force—Selection of Men

Wagner vs. City of Louisville.—A municipal ordinance reducing the police force of 304 men to 294 was complied with by the discharge of ten men. Subsequently the Circuit Court adjudged that the ordinance was void and the dismissed men were reinstated. Thereafter the Court of Appeals decided that the ordinance was valid and ten other men were discharged. Held, that the municipal authorities had discretionary power in the selection of the men to be dismissed, and the men dismissed the second time could not complain because of the reinstatement of the ten men first dismissed.—Court of Appeals of Kentucky. S. W. R. 117,

Mayor—Eligibility—Other Offices

Long et al. vs. Rose et al.—Pol. Code 1895 declares that "persons holding any office of profit or trust under the Government of the United States (other than that of postmaster), or of either of the several States, or of any foreign State," are "held and deemed ineligible to hold any civil office in this State." Held, that this did not render one who held the office of Solicitor of the County Court of a county ineligible to hold the office of Mayor of a municipal corporation located in such county; nor did it render persons who respectively held the offices of County Treasurer and member of the Board of Education of the county ineligible to hold the offices of Aldermen of such municipal corporation.—Supreme Court of Georgia. S. E. R. 63, 84.

Special Assessment—Defense

City of Kinston vs. Wooten.—Privilege Laws 1905, providing that in actions to enforce a special assessment the land owner may deny the amount claimed, and plead irregularities in assessment, or any fact destroying its legality, affords sufficient notice and opportunity to establish every defense available, and he cannot complain that a judgment against him in such action is the taking of property without due process of law.—Supreme Court of North Carolina. S. E. R. 63, 1074.

Power to Lease City Building

City of Biddeford vs. Yates.—The plaintiff city, on May 24, 1904, was the owner of a certain city building containing a hall known as the "opera house." On the same day the City Council by its committee on public property made and delivered to the defendant an instrument, purporting to be a lease of the hall, expiring June 1, 1907. On February 20, 1907, another City Council by the same committee made a second instrument, purporting to be a lease of the same hall to the defendant to take effect, in futuro, at the expiration of the first lease, to wit, June 1, 1907, for a term of three years from the latter date. Between February 20, 1907, the date of the second lease, and June 1, 1907, when it was to take effect, the term of office of the city officials under whom this latter lease was made had expired, and on the third Monday of March a new city government had been inaugurated. Under the facts, which are stated in the opinion, and the city charter and ordinances, the parts of which material to the case are also stated in the opinion, held (1) That the City Council had authority to authorize a lease of the hall. (2) That the City Council had authority to execute and deliver a lease under one city government to take effect in futuro, under another city government. (3) That the City Council could delegate authority to its committee on public property to make and execute such lease.—Supreme Judicial Court of Maine, 72 A. R., 334.

Liquor Laws—Prosecutions—Evidence

Booze vs. Yazoo City.—A detective gave K. money to buy whisky, and K. bought him a pint of whisky, stating that he had bought it of defendant, and so testified in the prosecution of defendant, which was the only direct evidence of the sale. Defendant denied a sale to K. Held, that evidence was admissible to show that, on the day when K. claimed to have bought the whisky from defendant, K. had received by express a gallon of whisky, and had told others that he had whisky and could let them have it, and did let others have whisky, as tending to raise a reasonable doubt of the truth of K.'s testimony.—Supreme Court of Mississippi, 48 S. R., 820.

Thomas vs. Yazoo City.—Where a city charter confers large powers upon the city in the enforcement of its police powers, the fact that a minimum punishment for the offense of selling intoxicating liquors exceeds the minimum punishment provided by the State law will not constitute cruel and unusual punishment.—Supreme Court of Mississippi, 48 S. R., 821.

Removal of Office—Term of Office

People vs. Ahearn.—Greater New York Charter, 1906, provides a four-year term for a Borough President. Constitution and Charter give the Governor power to remove him for cause, giving him a copy of the charges against him and an opportunity to be heard in his defense. Charter provides that a vacancy in the office of Borough President shall be filled for the unexpired term by the votes of a majority of all the members of the Board of Aldermen then in office representing the borough. Held, that where the Governor removed from office a Borough President, the removal conclusively determined that the officer was in legal contemplation an unfit person to continue to perform the public trust appertaining to his office during the term which then attached to the office, and the removal covered the entire term, and the Board of Aldermen had no power to reinstate the removed officer to serve for the remainder of the term.—New York Supreme Court. N. Y. S. 115, 664.

Reassessment—Benefits

Hughes et al. vs. City of Portland et al.—Where an ordinance of the city of Portland making reassessment for a local improvement contained a finding that the property assessed was specially benefited in the several respective amounts charged to it, but contained no finding that each parcel of land within the assessment district was assessed only to the extent of its respective and proportionate share of the full value of the improvement, and it affirmatively appeared that such an assessment had not been made, the reassessment ordinance was invalid, Portland City Charter, providing that the reassessment shall be made in accordance with the benefits, and also that each parcel of land shall be assessed only to the extent of its proportionate share of the cost.—Supreme Court of Oregon. 100 P. R. 942.

Annexation of Territory—Elections

State ex. rel. Sigsbee et al. vs. City of Birmingham et al.—Under Code 1907, authorizing the annexation of territory to a city, providing that after an election has been held in any territory on the question of annexation, under this or any "similar" law, no subsequent election shall be ordered for such territory or any part thereof within six months, an election under section 1073, to annex territory to a city, held within six months after an election for the annexation of such territory and other territory to the city, under Act August 8, 1907, authorizing the annexation of territory to the city on the act being approved by the voters at an election, is invalid; the word "similar" not meaning "precisely alike," but meaning "with more or less resemblance."—Supreme Court of Alabama, 48 S. R., 843.

Public Improvements—Local Assessment

People ex. rel. Lake Shore & M. S. R. Co. vs. City of Buffalo.—Laws 1891 authorize the city to improve the Buffalo river, and to pay the expenses thereof by local assessments. Section 407, as amended in 1892, provides that as improvement for a price exceeding \$500 must be ordered by a vote of two-thirds of the council after publication of notice of intention to make the order, and section 408 forbids the making of a contract for an improvement for a price exceeding \$500 until the assessment therefor has been confirmed. Laws 1902, as amended by Laws 1906, authorizes the city to issue bonds for a stated sum to defray the expenses of improving the river in the respects therein specified, and by sections 2 and 3 of said act provision is made for ultimately raising the amount by tax and reimbursing the general fund of the city to the extent of one-half of the amount of the bonds by assessing the same upon the property benefited. Held, that the provision in section 408 that the assessment must precede the contract does not apply to contracts for improvements specified in Laws 1902, as amended, since the proceeds of the bonds issued under the statute, and not the taxes to pay the same, constitutes the primary fund out of which the work is to be paid.—New York Supreme Court. 115 N. Y. S. 1056.

Absorption of One Municipality by Another

Village of Gandsi et al. vs. Town of Seminary.—There is no authority for one municipality to absorb another municipality; Code 1906, as amended by Laws 1908, granting no such power, but merely providing a time when, if the absorption occurs, the absorbed municipality shall stand abolished, and section 3301 and the other cognate sections of chapter 99 on municipalities providing alone for power in a municipality to incorporate, by extension of its limits, adjacent unincorporated territory.—Supreme Court of Mississippi. 48 S. R. 907.

Mandamus to Enforce Regulations

People ex. rel. Bartlett et al. vs. Buse et al.—Mandamus will not lie to compel the Mayor of a city to use his official authority to enforce a statute imposing a fine for selling liquor on Sunday against the proprietor of certain saloons, the duty not being sufficiently specific in its nature and mandamus being inapplicable to enforce the performance of official duties generally by interfering with the executive department of government.—Supreme Court of Illinois, 87 N. E. R., 840.

Funds for Park Purposes

McArthur et al. vs. City of Cheboygan.—A city raising a fund, by the sale of bonds, for the acquisition of land for a park, cannot legally transfer any part of the fund to the general fund, and the money of the park fund remains notwithstanding such transfer, and the money is available for park purposes.—Supreme Court of Michigan. 120 N. W. R. 575.

Oklahoma Paving Law Valid

Oklahoma City vs. Shields.—Act April 17, A. D. 1908, entitled "An Act to provide for the improvement of streets and other public places within cities of the first class, by grading, paving, macadamizing, curbing, guttering and draining the same, and declaring an emergency," is valid.—Supreme Court of Oklahoma. P. R. 100, 559.

NEWS OF THE SOCIETIES

National Fine Arts Federation.—At the convention called by the National Academy of Arts, meeting in Washington, D. C., May 11-13, for the purpose of forming a National Fine Arts Federation, the following papers are to be presented:

"Work of the Art Commission of the City of New York," by John Quincy Adams, secretary of that organization.

"Art Education in the United States," by Walter S. Perry, director department of applied arts, Pratt Institute, Brooklyn, N. Y.

"The Education of the Public by Lecture Courses on the Fine Arts," by A. H. Griffith, director of the Detroit Museum of Art.

"The Northampton Prize Flower Garden Competition," by George W. Cable of Northampton.

"How the American Civic Association Promotes Community Beauty," by J. Horace McFarland, president of American Civic Art Association.

"A Government Bureau of the Fine Arts," by Francis G. Newlands.

"Common Sense in Decoration and Craftsmanship," by Royal Cortissoz, art critic of the New York Tribune.

"What Can Be Done by Co-operation for Outdoor Art," by E. J. Parker, president of the Quincy Boulevard and Park Association of Illinois.

"The Cultivation of Public Taste," by Florence N. Levy, editor of the American Art Annual.

"The Metropolitan Improvement League of Boston," by Sylvester Baxter, secretary of that organization.

"Progress of Art in the Gulf States," by William Woodward, senior professor of drawing and painting, Tulane University, New Orleans.

"Art in the Public Schools," by Elmer Ellsworth Brown, United States commissioner of education.

"Some Aspects of Municipal Art Development," by Edward T. Hartman, secretary Massachusetts Civic League.

Engineers' Club of Philadelphia, Pa.

—For the first time since the completion of the Torresdale filter plant it was inspected May 1 by a contingent of scientific men, when 35 members of the Engineers' Club, 1317 Spruce street, with 70 guests, were piloted through the establishment. The party was accompanied by Fred. C. Dunlap, Chief of the Water Bureau, and guides were furnished at the works. Francis Head, mechanical engineer in charge of the pumping station, conducted the tour of inspection and explained in detail the different stages in the purification of the 220,000,000 gallons of water supplied daily. Perhaps no piece of machinery received more attention from the visitors than the sand cleaner, shown in operation inside one of the filter beds. This apparatus removes from the top of the bed a 2-inch layer of sand that needs to be cleaned, and shoots it out into another section of the bed as pure as it was before the Delaware water sifted through it. It was proclaimed as a great money saver and a marked improvement over the old method of purifying the sand. Before this machine was used it was necessary to remove the two inches of sand from the filter bed, heap it in large bins outside, cleanse it and haul it back into the bed again. Now all this handling is done away with and the whole operation of cleansing the sand goes on inside the filter bed. E. M. Nichols, of 212 South Seventh street, inventor of the cleaner, was on hand and told the party how the machine works. He said an entire bed, covering three-fourths of an acre, can be cleaned in two days, which means a saving of \$25,000 a year. There are 65 of these filter beds, comprising about 48¾ acres. On an average, it is necessary to clean them once in six weeks, the frequency of this process depending entirely upon the condition of the

river water. The capacity, it was explained, is 240,000,000 gallons of filtered water a day. From the filter beds the visitors were taken to the pumping station, where there are seven pumps of 40,000,000 gallons capacity each daily. These pumps supply the 120 pre-filter beds that spread over three acres. The station is in charge of George M. Maull. At the close of the tour of the grounds the visitors were taken into the laboratory, where Francis West, bacteriologist, showed just what kind of water was being pumped into the mains for the consumption of the residents of Philadelphia. He displayed bottles of purified and unpurified water, and gave a detailed explanation of the process of testing the filtered water for bacteria. In the party were: J. A. Vogel-son, of the Bureau of Water; W. P. Dallett, president of the Engineers' Club; Prof. William Easby, Jr.; Carl Hering, Fritz Bloch, M. R. Pugh, R. G. Develin, L. S. Bruner, John Carlisle, James Brown, William Myers, J. O. Clark, E. J. Dauner, Walter Ballinger, Ralph Binder, H. R. White, E. S. Foljambe, F. N. Morton, A. C. Heintze, H. E. Rice, W. E. Kuen, F. V. Siddons, John A. Murphy, E. L. Ingram, John Webster and John R. T. Ninesteele. The general scheme of the filtration plant and the purpose and results of daily bacterial tests were discussed by Francis West, chemist at the Torresdale plant, in a talk before the Club.

Associated Engineers' Society of St. Louis.—The society heard an address May 5 regarding some peculiar engineering problems by Louis Chevalier, Engineering Bridge Expert of the Seaboard Air Line Railroad, who took for his subject "The Reconstruction of Richardson's Creek Bridge." Mr. Chevalier told of the loss of this bridge, which is in the southern part of North Carolina, by a railroad wreck about two years ago, and the nice engineering problems which were confronted in its rebuilding. He illustrated his lecture with blue prints and photographs. The lecture was well attended by prominent engineers in the city, including Maj. Joseph E. Kuhn, United States Army Engineer; W. T. Brooke, City Engineer of Norfolk, and E. B. Noyes, Engineer at the Norfolk Navy Yard. The members of the society are looking forward to a lecture to be delivered by Admiral Taussig, Commandant of the Navy Yard, at the Monticello Hotel on May 26. His subject has not yet been announced. The meeting was held in the society's rooms in the Paul-Gale-Greenwood Building, with President Christian in the chair. W. D. Faucette is Secretary of the society.

Boston Merchants' Association.

Bound on a mission for the commercial and industrial advancement of New England and to establish a mutual relationship between the merchants of Maine and New Hampshire and those in Boston with whom they do business, about 125 members of the Boston Merchants' Association left May 4 for a tour of eastern New England cities. The trip is expected to occupy three days, Portsmouth, the only New Hampshire city to be visited, being the first stopping place. The itinerary for the succeeding days includes visits to most of the cities of Maine, where elaborate plans have been perfected for the reception of the guests. Some small cities and towns where the tourists have not planned to stop have made arrangements to have excursion trains run to the nearest city on the list of stops in order to participate in the festivities.

Engineers' Club of Columbus.—At a meeting May 1 Assistant City Engineer Kemmler delivered an address on road building. He declared that the trouble with the present road building proposition was that public officials are spending entirely too much money on building and rebuilding roads and too little on systematic repairing. Mr. Kemmler stated that the last international conference called by France for the purpose of getting the advice of other nations on this subject was regarded as a failure, as none of the nations represented at the conference were able to throw any new light upon the road preservation subject. He stated that there were 70,000 miles of roads in Ohio that had cost on an average \$5,000 a mile, and that practically nothing was being done to maintain them. He stated that in the State of New Jersey, the pioneer in the matter of State aid road building, it had become necessary to pass a law compelling the retention of all county moneys by the State until the counties had followed the instructions of the State Road inspector as to certain repairs he had commanded. Mr. Kemmler made the statement that while the automobile reduced the cost of the maintenance of city streets, the suction produced by speed of more than 20 miles was tearing the best of country roads to pieces and that the State authorities had not yet run upon any system of road preservation. The speaker stated that all public roads should be inspected at least twice a year and that police officers and sanitary officials should report any break in street surface instantly, so that it could be repaired before it spread. The speaker severely criticized the license tax as a producer of revenue for road repair, declaring it was nowhere near adequate for the successful maintenance of public highways and entirely too uncertain.

Springfield, Mass., Board of Trade.

The opening of the new quarters on May 7 was made an occasion for a gathering of business men from Western New England. The speakers of the evening were the Hon. Louis A. Frothingham, Lieutenant-Governor of Massachusetts; James J. Storrow, president of the Boston Merchants' Association, and the Hon. Lloyd B. Chamberlain, president of the Massachusetts State Board of Trade. The Board also entertained as their guests the Mayors of the larger Western New England cities. At the close of the evening an informal reception was given.

American Society of Civil Engineers.

—Announcement has been made of the following meetings: Wednesday, May 19, 8:30 p. m.—At this meeting two papers will be presented for discussion, as follows: "The Sewer System of San Francisco, and a Solution of the Storm-Water Flow Problem," by C. E. Grunsky, M. Am. Soc. C. E.; and "Some Extensive Railroad Surveys, and Their Cost per Mile," by W. S. McFetridge, M. Am. Soc. C. E.

June 2, 8:30 P.M.—Two papers will be presented for discussion as follows: "Tests of Built-Up Steel and Wrought-Iron Compression Pieces," by Arthur N. Talbot, M. Am. Soc. C. E., and Herbert F. Moore, Esq.; and "Caisson Disease and Its Prevention," by Henry Japp, M. Am. Soc. C. E.

Clinton Hill Improvement Association, Newark, N. J.—At the fourth annual dinner held in the Krueger Auditorium nearly 300 persons were present. Dr. William Buermann, president of the association, acted as toastmaster.

Mayor Jacob Haussling spoke briefly. Other speakers were: Howard MacSherry, Commissioner Arthur A. Denman of the Board of Works, Alderman William Pennington, president of the Common Council, and the Rev. C. Everett Granger.

American Water Works Association.

—The Pennsylvania Railroad has issued a notice regarding train schedules to the convention of the American Water Works, Milwaukee, Wis., June 7-12. At the request of W. H. Van Winkle, chairman of the committee on hotels and transportation, 50 Church street, New York, a special train from New York to Milwaukee, Wis., will leave New York at 10:55 a. m. on Saturday, June 5, and arrive in Chicago at 9 a. m. on Sunday, June 6, and in Milwaukee at 11:30 a. m. The special train will be composed of high-grade Pullman parlor, smoking, 12-section drawing-room, sleeping, Pennsylvania system dining and seven stateroom observation cars. In the event of travel for this special train not being sufficient to warrant the operation thereof special cars will be attached to regular trains for through movement to Milwaukee. No special rate has been authorized to Milwaukee for this occasion. The summer excursion rate, New York to Milwaukee and return, is \$41.20; one way fare, \$21.70. Party rate, 10 or more persons traveling together on one ticket, New York to Chicago, \$18.25. Rate from Chicago to Milwaukee, \$1.70; Pullman berth rate, New York to Milwaukee, \$5.50; stateroom, \$15; drawing-room, \$20. Accommodations on the special train will be limited.

City Club of New York.—At the weekly luncheon, May 8, J. Horace McFarland, of Harrisburg, Pa., president of the American Civic Association, speaking on "City Parks and Playgrounds," attacked the policy of New York City in providing automobile drives and bridle paths for the use of the rich in its parks and neglecting to provide small parks and recreation centers for the poor of the congested districts. The municipal and moral efficiency of a city, he said, was due in large measure to the way it was planned with reference to parks, playgrounds and breathing spots. He cited Washington as the ideal city with respect to its general plan, and said it was due to the foresight of George Washington, who looked 200 years ahead and planned an ideal capital for a nation of 100,000,000 population. George McAneny, president of the club, spoke against the use of public parks for private purposes and said the City Club had joined the movement to keep Central Park free from invasion by the Academy of Design. Eugene A. Philbin said workingmen had the choice between parks and saloons for recreation, while Dr. Luther H. Gulick, president of the Playground Association of America, and Delos Dickinson also spoke, and William R. Willcox, head of the Public Service Commission, sent a letter in which he said: "Every small park should have a well-equipped playground, and more small playgrounds should be provided in the thickly populated centers. I have always felt that the children in the four or five lower grades of our public schools would receive a far better training if half the time now spent by them in crowded classrooms was given up to well-directed play on properly equipped grounds. Small children under ten years of age, instead of spending five hours in the schoolroom, would be far

better off mentally and physically if the city made such provision that this time could be divided between the schoolroom and well-supervised playground."

National Fire Protection Association.

—The program of the thirteenth annual meeting of the National Fire Protective Association, which will be held in the assembly rooms of the New York Board of Fire Underwriters, on May 25-27, includes the discussion of the year's work, the consideration of the reports of the various committees and the election of officers for the ensuing year. The members in attendance will be the guests of the Insurance Society of New York at an informal dinner on May 25 at the Underwriters' Club. There will be a visit to the pumping station and an inspection of the high-pressure fire-fighting service at the invitation of I. M. de Varona, Chief Engineer of the city's department of water supply, gas and electricity, and there will be a fire boat exhibition, to which Nicholas J. Hayes, the Fire Commissioner, and Edward F. Croker, Chief of the Fire Department, have invited the members.

Municipal Art Society of Baltimore.

—A plan for placing a sculpture garden in Wyman Park, at the northwest corner of Charles street boulevard and Twenty-ninth street, has been completed by the Municipal Art Society. Members of the society are enthusiastic over the prospect of having an outdoor museum of sculpture which will be a mecca for Baltimoreans and visitors who come to see the many beautiful spots which have earned for Baltimore the name of the Monumental City. The sculpture garden is the first finished portion of a plan on which the society is working and which has for its purpose the general beautifying of every section of the city. The need of each locality, suggested by its people and the topography, will shape the character of the other plans. The idea of the society with regard to the sculpture garden is to create a spot where sculpture gems may be grouped, a few at first and then more as fast as additions are made to the collection. The society will offer to the city \$5,000, which is nearly all the profits from the National Sculpture Exhibition held last year at the Fifth Regiment Armory, on condition that the city appropriate \$10,000 and that the Park Board construct the foundation and other essentials of the garden. This work, it is estimated, would cost about \$10,000. It is proposed to combine the city's \$10,000 and the society's \$5,000 and commission sculptors—some of them Baltimoreans—to furnish subjects. While this money will not be sufficient to purchase many pieces, it will be the nucleus, which, it is thought, will be added to by prominent Baltimoreans who have signified their willingness to present the city with works of art should an appropriate place be found for them. The garden as planned will have a court at the entrance, with seats and urns at corners and intervals. Steps will lead down to the center of the garden, where a pool will be constructed. Facing the entrance on the other side of the pool will be an artistic spot, where the central figure is to be placed. It has been suggested that this would be an admirable place for the proposed Poe memorial, and members of the society have received this suggestion with enthusiasm. To the right and left of the pool other vistas will stretch out with places for statuary at intervals, which will make the whole effect artistic and striking. It is proposed to make the garden as inexpensive as possible without spoiling the effect. Until works of the char-

acter desired are acquired vases, urns and other decorations can be used to complete the effect.

Boston Society of Engineers.—A well-attended meeting of the Boston Society of Civil Engineers was held Tuesday, May 4, in Lorimer Hall. Frederick P. Stearns and Allen Hazen, who accompanied President Taft on his recent visit to the isthmus, delivered addresses on the canal. Mr. Stearns considered the comparative merits of the sea level and lock canals and gave as his opinion that because of its smaller cost and greater ease of construction the lock type is by far the more practicable for the isthmus undertaking. He also gave a detailed description of the canal plans.

Calendar of Meetings

- May 11-14.**
Playground Association of America.—Third annual congress, Pittsburg, Pa.—Henry S. Curtis, 705 Ouray Building, Washington, D. C.
- May 16-19.**
City Marshals and Chiefs of Police of Texas.—Annual convention, Galveston.—Chief J. H. Maddox, Fort Worth, Chairman Executive Committee.
- May 18-21.**
National Good Roads Congress.—McCoy Hall, Baltimore, Md. Arthur C. Jackson, Secretary, Chicago, Ill.
- May 20-22.**
Southwestern Electrical and Gas Association.—Annual meeting, Dallas, Tex.—R. B. Stichter, President, Dallas, Tex.
- May 25-27.**
National Fire Protection Association.—Annual meeting, New York, N. Y.—W. H. Merrill, Secretary, 382 Ohio street, Chicago, Ill.
- June 1-4.**
National Electric Light Association.—Thirty-second convention, Atlantic City, N. J.—John F. Gilchrist, Engineering Societies Building, 29 West 39th street, New York, N. Y., Secretary.
- June 8-12.**
American Water Works Association.—Twenty-ninth annual convention, Milwaukee, Wis.—J. M. Diven, Secretary, 14 George St., Charleston, S. C.
- June 15-19.**
International Association of Police Chiefs.—Annual convention, Buffalo, N. Y. Maj. Richard Sylvester, President, Washington, D. C.
- June 22-24.**
Municipal League of Indiana.—Annual convention, Lafayette, Ind. J. W. Schooler, Secretary, Lafayette.
- June 24-25.**
American Institute of Chemical Engineers.—Semi-annual meeting, New York, N. Y.—J. C. Olsen, Secretary, Polytechnic Bureau, Brooklyn, N. Y.
- June 28.**
American Institute of Electrical Engineers.—Annual convention, Hotel Frontenac, Thousand Islands, Frontenac, N. Y.—R. W. Pope, Secretary, 33 West 39th street, New York, N. Y.
- June 29-July 3.**
American Society for Testing Materials.—Annual meeting, Atlantic City, N. J.—Edgar Marbury, Secretary, University of Pennsylvania, Philadelphia, Pa.
- July 6-9.**
American Society of Civil Engineers.—Annual convention, Mount Washington Hotel, Bretton Woods, N. H.—Charles Warren Hunt, Secretary, 220 West 57th street, New York, N. Y.
- August 17-20.**
International Association of Fire Engineers.—Annual convention, Grand Rapids, Mich.—James McFall, Secretary, Roanoke, Va.
- August 25-27.**
League of American Municipalities.—Thirteenth annual convention, Montreal, P. Q., Canada.—John MacVicar, Secretary, Des Moines, Ia.
- November 9-11.**
American Society of Municipal Improvements.—Annual convention, Little Rock, Ark.—A. Prescott Folwell, Secretary, 241 W. 39th St., New York, N. Y.
- November 15-19.**
National Municipal League.—Annual meeting, Cincinnati, O. Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.
- November 15-19.**
American Civic Association.—Annual meeting, Cincinnati, O. Richard B. Watrous, Secretary.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

| STATE | CITY | RECEIVED UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|----------------------------|-----------------|-------------------|--|--|
| STREET IMPROVEMENTS | | | | |
| New York | Glens Falls | May 12, 8 p.m. | Constructing 10,900 sq. yds. asphaltum concrete, 2 sts. | Howard M. West, City Engineer. |
| New York | Brooklyn | May 13 | Furn. trap rock and screenings in parkways | Henry Smith, Pres. Park Board. |
| Ohio | Youngstown | May 13 | Paving Fairgreen ave., Duquesne st., and Pond's alley | W. H. McMullin, Clk. Bd. Pub. Serv. |
| Illinois | Chicago | May 13 | Repaving State st. below 39th st. | H. S. Dietrich, Pres. Bd. Local Impts. |
| New Jersey | Newark | May 13 | Brick paving 6 sts. | W. R. Sherrerd, Ch. Engr. Bd. P. Wks. |
| Ohio | Bucyrus | May 14, noon | Grading, macadamizing, piking and screening various roads | H. V. Flichinger, Road Engr. |
| Ohio | Paulding | May 14, noon | Grading, draining, culverting, macadamizing, 228,084 lin. ft., 12 sections, 6 roads, inc. stone approaches | C. L. Straw, County Engineer. |
| Indiana | Lafayette | May 15, 10 a.m. | Bldg. gravel road, petitioned for by D. A. Buck, et. al. | John P. Foresman, County Auditor. |
| Ohio | Youngstown | May 15 | Turnpiking Jackson Center road, Jackson twp., 5 miles long | Park Comrs., Dollar Bank Bldg. |
| Ohio | Cleveland | May 15, 11 a.m. | Grading, draining, etc., Mayfield road No. 2 | Wm. F. Black, Clk. Co. Comrs. |
| South Dakota | Ashton | May 15, noon | Regrading, 5 miles road; grading, 10 miles new road | O. B. Olson, Clk. Bd. Supervisors. |
| Indiana | Marion | May 15, 2 p.m. | Bldg. gravel road, 5,395 ft. long, in Monroe township | A. Y. Stout, County Auditor. |
| Missouri | St. Charles | May 15, 8 p.m. | Constructing 38,768 sq. ft. of granitoid sidewalk, 10,415 lin. ft. curb and gutter | Carr Edwards, City Engineer. |
| Dist. Columbia | Washington | May 15, noon | Laying asphalt block and sheet asphalt various sts. and aves. | Maj. W. V. Judson, Engr. Com. |
| Minnesota | Breckenridge | May 15, 10 a.m. | Grading and ditching 5 miles of road | Wm. Thymian, Clk. Meadows Tw. Bd. |
| Massachusetts | Boston | May 17 | Grading, surfacing, etc., 60,000 sq. yds. road; 18,000 sq. yds. walk, 1,250 sq. yds. granolithic surfacing, 8,512 ft. 10-20-in. vit. pipe, etc. | J. R. Rablin, C.E. Met. Park Com. |
| New Jersey | Millburn | May 17, 8 p.m. | Bldg. Portland cement sidewalks on five streets | Henry S. Achen, Chm. Twp. Com. |
| Washington | Snohomish | May 17 | Bldg. over a mile of Everett-Mukilteo road | Board of County Commissioners. |
| Ohio | Toledo | May 17, 10 a.m. | Repairing Jerusalem stone road No. 19 | D. T. Davies, Jr., County Auditor. |
| New York | Cortlandt | May 17, noon | Grading and graveling road, bldg. culvert, etc. | S. Allen Mead, Town Clerk. |
| New York | New York | May 17, 11 a.m. | Regulating and macadamizing E. 14th st., Gravesend | Comrs. Town Gravesend, c o Mayor. |
| Virginia | Roanoke | May 17, noon | Improving two streets | R. H. Willis, City Clerk. |
| Ohio | Bowling Green | May 17, 1 p.m. | Grading, draining, macadamizing, 2 roads, 3 1-2 and 2 3-4 miles | J. F. Gallier, County Auditor. |
| Ohio | Jefferson | May 17, 1 p.m. | Bldg. 5 miles brick or macadam road, Marroe twp. | E. C. Remick, County Auditor. |
| Indiana | Greencastle | May 17, 2 p.m. | Constructing macadamized road in Green twp. | D. V. Moffett, County Auditor. |
| Indiana | Rushville | May 17, 2 p.m. | Bldg. macadam road between Parke and Putnam Counties | H. A. Henderson, County Auditor |
| New Jersey | Jersey City | May 17, 2 p.m. | Paving 1,900 sq. yds. with Belgian block, including excavation, cross-walks, flagging, etc. | Geo. T. Bouton, Clk. St. & W. Bd. |
| West Virginia | Bramwell | May 17 | Paving and curbing streets | J. A. Waddell, Mayor. |
| Virginia | Port Monroe | May 17, 10 a.m. | Bldg. macadam roads, concrete walks, brick gutters | Capt. E. R. Tilton, O. M. |
| Pennsylvania | Pittsburg | May 17, 10 a.m. | Repaving 5 sts. with sheet asphalt, 7 with block stone | Jos. G. Armstrong, Dir. D. P. W. |
| Ohio | Girard | May 17 | Macadamizing 2 roads, 7,390 ft. long | John Howells, Clk. Liberty Twp. |
| Ohio | Sandusky | May 17 | Paving Jackson st., any material; cost, \$18,000 | C. M. King, City Engineer. |
| Ohio | Marietta | May 18 | Brick block paving, 7,681 sq. yds., curb, 4,427 ft., etc., Greene st. | E. Frank Gates, City Engineer. |
| Wisconsin | Menasha | May 18, 7:30 p.m. | Bldg. concrete pavement one street | D. McMahon, Chm. St. Com. |
| Ohio | Circleville | May 18, noon | Brick paving, 8,700 sq. yds., curb, sidewalks, Scioto st. | J. H. Sweetman, City Engineer. |
| New Jersey | Camden | May 18 | Asphalt paving, 4 sts.; Belgian block on earth, 2 sts. | Edward Francis, Chm. St. Com. |
| New York | Brooklyn | May 19, 11 a.m. | Asphalt repairing 5 yr. guar., 8 sts., 14,215 ft. new curb, repaving granite 1 st., 4,150 sq. yds.; cement sidewalks, 17,450 sq. ft.; furn. 800 tons refined asphalt | Bird S. Coler, Boro. President. |
| Illinois | Chicago | May 19, 11 a.m. | Paving Loomis st. with granite blocks | H. S. Dietrich, Pres. Bd. Loc. Impts. |
| Ohio | Cleveland | May 19, noon | Brick paving, curbing, etc., W. 80th st. and Elsie Court | W. J. Springborn, Pres. Bd. Pub. Serv. |
| New Jersey | Ridgefield Park | May 19, 5 p.m. | Macadamizing, curbing, gutter, etc.; \$2,500 check | Sam'l J. Shaw, Jr., Village Clerk. |
| Ohio | Cleveland | May 20, noon | Cement walks and stairways for Kinsman rd. SE., viaduct | W. J. Springborn, Pres. Bd. Pub. Serv. |
| Manitoba | Winnipeg | May 20, 11 a.m. | Laying 49,672 sq. yds. asphalt pavements | M. Peterson, Sec'y Bd. Control. |
| Wisconsin | Lake Mills | May 20, 8 p.m. | Laying 22,200 sq. yds. asphalt macadam, 8,000 ft. curb and gutter | W. G. Kirchoffer, Engr., Madison. |
| North Carolina | Wilmington | May 20 | Furn. crushed stone and granite curb | W. E. Springer, Mayor. |
| Oregon | Rainier | May 20, 8 p.m. | Improving streets in districts Nos. 1 and 2 | J. B. Doam, Police Judge. |
| Ohio | Cleveland | May 21, 11 a.m. | Improving E. Lake road; check, \$1,000 | W. F. Black, Clk. Bd. Co. Comm. |
| Ohio | Cardington | May 21, 11 a.m. | Constructing road improvement | W. C. McFarland, County Auditor. |
| Ohio | Paulding | May 21, noon | Grading, draining, macadamizing, etc., 50 miles pike, 10 sections; estimated to cost \$171,000; C. L. Straw, Engr. | Floyd Atwill, County Auditor. |
| Ohio | Youngstown | May 21 | Paving Falls ave. | W. H. McMullin, Clk. Bd. Pub. Serv. |
| Ohio | Mt. Gilead | May 21 | Bldg. Cardington Rd., 1 1-2 miles; also 3 1-4 miles, Gilead rd. | W. C. McFarland, County Auditor. |
| Ohio | Chatfield | May 21, noon | Grading, macadamizing, piking 2 roads, 4.34 miles long | Geo. Gugel, Chm. Twp. Com. |
| Illinois | Chicago | May 22, 11 a.m. | Constructing 6-ft. concrete sidewalks; 42 contracts | C. A. V. Standish, Sec'y Bd. Loc. Imp. |
| Ohio | Westerville | May 22, noon | Grading and paving brick or other material, curb, 2 streets | Ellsworth Horlocker, Village Clerk. |
| Ohio | Cleveland | May 24, 11 a.m. | Improving Irish road | W. F. Black, Clk. Bd. Co. Comm. |
| Kentucky | Louisville | May 24, noon | Bldg. undergrade crossing in Oak st.; 20,000 cu. yds. excav.; 2,300 cu. yds. concrete; 2,000 sq. yds. granite paving | Alex. G. Barret, Chm. Bd. Pub. Wks. |
| Ohio | Ashland | May 24, noon | Grading, carting and paving Chestnut st., E. L. Berry, Engr. | Edgar Koehl, Village Clerk. |
| Ohio | St. Clairsville | May 25, noon | Grading, draining, paving, curbing, 8,600 ft. of streets | O. B. Nary, Village Clerk. |
| Indiana | Rushville | May 25, 10 a.m. | Constructing gravel road in Richland Township | J. M. Stone, County Auditor. |
| Oklahoma | McAlester | May 25, 7:30 p.m. | Bldg. vit. block pavement, cement curb and gutter | J. M. Gannaway, City Clerk. |
| New Jersey | New Brunswick | May 26 | Improving 11 roads, 119,000 ft. long, macadam, etc. | Morgan F. Larson, County Engineer. |
| New Jersey | New Brunswick | May 26 | Paving 28,000 sq. yds. any material; curb, 7,500 ft. | John T. Kemp, Street Comr. |
| New York | Cortlandt | May 26, noon | Resurfacing 5 miles of turnpike with gravel | S. A. Mead, Town Clerk. |
| Ohio | Cincinnati | May 27 | Extending Hillside ave. in Delhigh Twp. | Bd. of Co. Comm'rs. |
| Wisconsin | Beloit | May 27, 10 a.m. | Improving Portland ave. from Fourth to Hackett sts. | Jos. L. Headley, Chm. Bd. Pub. Wks. |
| Ohio | Cincinnati | May 28, noon | Treating Salem Pike with tarvia; improving Foley road | Stanley Struble, Pres. Bd. Co. Com. |
| Ohio | Columbus | May 28 | Macadamizing bridge approach and treating with tarvia | F. M. Sayre, County Auditor. |
| Ohio | Cleveland | May 29 | Improving Center Ridge Road | Board of County Commissioners. |
| Indiana | Elkhart | May 29 | Paving Princeton st. 7,000 sq. yds. and 1 1-4 miles on Franklin st. with asphalt, brick, wood block or asphalt block | City Clerk. |
| Pennsylvania | Harrisburg | May 31 | Rebldg. 7,820 ft. road, E. Pennsboro. twp. | Jos. W. Hunter, State Hwy. Comr. |
| Florida | Pensacola | June 1, noon | Paving 170,700 sq. yds. with clay or shale blocks, sheet asphalt, bitulithic, wood block on macadam pavement and constructing 115,950 linear ft. concrete curb; T. Chalkley Hatton, C.E. | R. M. Bushnell, Chm. Bd. of Bond Trus. |
| North Dakota | Carrington | June 1 | Grading roads | W. H. Searl, Clk. Bd. Supervisors. |
| Ohio | Piqua | June 1 | Bldg. 14,000 sq. yds. brick, 10,000 brick or macadam | Board of Public Service. |
| Ohio | Columbus | June 2, 2 p.m. | Grading and macadamizing Harrisburg pike | John Scott, Clk. Co. Comrs. |
| Indiana | Vincennes | June 8, 2 p.m. | Constructing 27,975 ft. in Knox Co. gravel roads | J. T. Scott, County Auditor. |

BIDS ASKED FOR

| STATE | CITY | RECEIVED UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|----------------|----------------|-------------------|--|---|
| SEWERAGE | | | | |
| New York | Buffalo | May 13, 11 a.m. | Bldg. 24-in. concrete, 20 to 10-in. tile sewer, Minnpls. ave. | F. G. Ward, Comr. Pub. Wks. |
| Ohio | Youngstown | May 13 | Bldg. sewer in portion of Belmont ave. | W. H. McMillin, Clk. Bd. Pub. Serv. |
| Pennsylvania | Danville | May 13 | Bldg. 66-in. storm water sewer, 1,000 ft. long | Bd. Trus., State Hospital. |
| Ohio | Dayton | May 13, noon | Furnishing clay and iron sewer pipe | W. H. Bussard, Clk. Bd. Educat'n. |
| South Dakota | Huron | May 14, 8 p.m. | Bldg. 2 main sewers; Loweth & Wolff, St. Paul, Minn., Engrs. | M. Schoenert, City Clerk. |
| Kentucky | Louisville | May 14, noon | Bldg. 1,800 ft. concrete and pipe sewer, 2 sts.; Contracts 38-39 | J. B. F. Breed, C.E., Sewer Comm. |
| Wisconsin | Oshkosh | May 15, 2 p.m. | Bldg. 8 sewers in sundry streets | W. A. Marden, Chm. Bd. Pub. Wks. |
| Indiana | Ft. Wayne | May 17, 10 a.m. | Dredging Willow creek and tiling branches in Allen and Noble counties; cost, \$70,000 | David Spindler, Surveyor, Allen Co. |
| Wyoming | Basin | May 17, 7:30 p.m. | Constructing sewerage system | M. O. Barnes, Mayor. |
| Connecticut | New Haven | May 17 | Constructing sewer in River and South Front sts. | C. W. Kelly, City Engineer. |
| Utah | Provo | May 18, 1 p.m. | Constructing 8,500 ft. vit. clay sewer, Dist. No. 10 | E. A. Jacob, City Engineer. |
| Ohio | Van Wert | May 18, 10 a.m. | Constructing concrete sewers | Surveyor Van Wert County. |
| New York | Syracuse | May 18, noon | Constructing 2 1-3 miles main intercepting sewer from 9 to 33 inches in diameter; principal items are 90,000 cu. yds. excavation and 6,000 cu. yds. concrete; check, \$10,000 | Harry J. Hamlin, Sec'y Sewer Bd. |
| Saskatchewan | Estevan | May 19 | Bldg. 2,400-ft. tile sewer, water works, etc. | L. A. Duncan, Sec'y-Treasurer. |
| New York | Brooklyn | May 19, 11 a.m. | Constructing sewers, basins and appurtenances in various sts. | Bird S. Coler, Boro. President. |
| Ohio | East Liverpool | May 20, noon | Bldg. 6 sanitary sewers, manholes, etc., 8 sts., Dist. No. 1 | A. S. Hughes, Clk. Bd. Pub. Service. |
| North Carolina | Wilmington | May 20 | Furnishing terra-cotta pipes | W. E. Springer, Mayor. |
| Ohio | Youngstown | May 21, noon | Constructing sewers on Burnet and Scott Sts. | W. H. McMillin, Clk. Bd. Pub. Serv. |
| Kentucky | Louisville | May 21, noon | Bldg. Sec. A. N.E. trunk sewer and Sec. A. Beargrass Imp. Contract No. 36; double concrete sewer, 5,640 ft. long, 48 to 60-in. diam.; inc. 7,000 cu. yds. concrete, 760,000 lbs. steel; 4,500 ft. of sewer on pile foundation | J. B. F. Breed, Ch. Engr., Sew. Com. |
| Ohio | Oberlin | May 22, noon | Constructing sewage disposal plant | Village Clerk. |
| New Mexico | Carlsbad | May 24, noon | Constructing sanitary sewer system; Burns & McDonnell, Engrs. | J. B. Harvey, City Clerk. |
| Iowa | Des Moines | May 24, noon | Constructing tile drain, District No. 7 | H. B. Frase, County Auditor. |
| Colorado | Las Animas | May 24, 2 p.m. | Bldg. \$48,760 sanitary sewer; 30,940 ft. pipe sewer, 8-in. cut 5.6 ft.; 6,650 ft. 10-in. cut 6.5 ft.; 1,790 ft., 12-in. cut 7.5 ft., 6,413 ft. 15-in. 9-ft. cut; 132 ft. 16-in. c. i. pipe; 7,600 ft. 3-4-in. galvanized pipe; 9 lampholes; complete with covers; 104 manholes, complete | W. R. Murphy, City Engineer. |
| Saskatchewan | Yorktown | May 24 | Bldg. 2,000 ft. 12-in. and 15,000 ft. 8-in. sewers, etc. | F. T. McArthur, Town Engineer. |
| Minnesota | Albert Lea | May 26, 5 p.m. | Labor and material for Spring Lake Park trunk sewer | Wm. Barneck, City Engineer. |
| Washington | Seattle | May 28 | Constructing section of north trunk sewer system; \$1,000,000 | R. H. Thomson, City Engineer. |
| Virginia | Lawrenceville | June 1 | Sale of sewerage and water works franchise; pop. 2,400 | City Clerk. |
| Ontario | Toronto | June 9, noon | Bldg. Secs. 4 and 5 of high level interceptor; C. H. Rust, C.E. | Joseph Oliver, Mayor. |
| Minnesota | Albert Lea | June 10 | Constructing 2,495 linear ft. 15-inch pipe sewer, 110 ft. 40 x 48-in. reinforced concrete, 243 ft. 15 x 48-in., 1,140 12 x 36, x 48, 497 ft. 12 x 33 x 44 | Wm. Barneck, City Engineer. |
| WATER SUPPLY | | | | |
| Pennsylvania | Ridgway | May 12, 6 p.m. | Labor and material for bldg. 1,500,000-gal. rein. conc. reservoir | S. C. Chilcote, Secretary. |
| Ohio | Dayton | May 13, noon | Furn. 1,000 5-8-in., 50 3-4-in., 25 1-in. meters, without couplings | J. C. Ely, Pres. Bd. Pub. Serv. |
| Minnesota | Albert Lea | May 13, 5 p.m. | Bldg. 315 ft. 8-in., 436 ft. 6-in., 3,249 ft. 4-in. c. i. water mains, fifteen 6-in. and five 4-in. gate valves | Wm. Barneck, City Engineer. |
| New York | Buffalo | May 14 | Bldg. water works pumping station at foot of Porter ave. | F. G. Ward, Com'r Pub. Wks. |
| Ohio | Dayton | May 14 | Improving the Riverdale dam | Wm. A. Budroe, Clk. Bd. Pub. Serv. |
| Ohio | Miamisburg | May 15, noon | Furn. and laying 3,906 ft. 4-in., 2,068 ft. 6-in., 1,308 ft. 8-in. pipe, seven 4-in. fire hydrants, one 6-in. hydrant, etc. | Trustees of Public Affairs. |
| Indiana | Muncie | May 15 | Bldg. compression system of water works at County bldgs. | Jos. E. Davis, County Auditor. |
| New York | New York | May 17, 3 p.m. | Furn. and install two 12,500,000-gal. steam turbo turbine pumps, two 225 h.p. water-tube boilers, Jerome ave. station | Board of Water Supply. |
| Colorado | Lamar | May 17 | Bldg. section 2, pipe line from intake to reservoir, 9 miles; also for bldg. concrete reservoir | C. W. Heaton, Town Clerk. |
| Alberta | Lethbridge | May 17 | Furn. steam pump, capacity, 2,000,000-gal. 24 hours | Smith, Kerry & Chace, Confederation Life Bldg., Toronto, Ont. |
| New York | Yonkers | May 17, 8 p.m. | Furn. f.o.b. Yonkers 1 engine, dir. con., with 7 k.w. dynamo, 115 voltage; also submerged centrifugal pump, dir. con. to motor | J. D. McIntyre, Sec'y Bd. C. & S. |
| Michigan | Albion | May 17 | Constructing 250,000-gal. reinforced concrete reservoir | W. R. Noyes, City Clerk. |
| Ontario | Toronto | May 18, noon | Material and labor for works in con. with water filtration plant | Joseph Oliver, Chm. Bd. Control. |
| Saskatchewan | Estevan | May 19 | Bldg. w. w. sys. and main sewer, inc. 7,300 ft. w. main; 2,400 ft. tile sewer; steel water tower; gasoline engines & power pump; Willis Chipman, C.E., Toronto | L. A. Duncan, Sec'y-Treas. |
| New York | Glens Falls | May 20, 8 p.m. | Bldg. earth reservoir dam, 75 ft. high with concrete core wall, on Butler brook, 5 miles from city | Howard M. West, Supt. W. W. |
| Massachusetts | Concord | May 20, 10 a.m. | Bldg. intake in Nagog Pond, laying c. i. pipe, etc., Acton and Concord | Metcalf & Eddy, 14 Beacon St, Bost. |
| Kentucky | Bowling Green | May 20, 10 a.m. | Furn. and install 3,000,000-gal. of mech. pres. filtration plant | Grunberg Jackson, C.E., Mt. Pleasant Tenn. |
| Ohio | East Cleveland | May 22, noon | Constructing 6-in. cast-iron water pipe, including hydrants, etc. | Henry Wagner, Clk. Bd. of Trustees. |
| Iowa | State Center | May 21 | Furn. and laying 2,650 ft. of water mains | W. J. Whitehill, Town Clerk. |
| Oklahoma | McAlester | May 24, 7:30 p.m. | Constructing water extensions 26,022 ft. 6-in. Class B, 2,210 ft. 4-in. Class B. c. i. pipe, etc., 3,250 ft. galvanized iron pipe, cost, \$28,704 | J. Phelan, City Engineer. |
| New Jersey | East Orange | May 24 | Furnishing wrought iron pipe, all makes; old bids rejected | William Cardwell, Mayor. |
| Pennsylvania | Chester | May 24, 2 p.m. | Laying flanged intake pipe in Del. river; bldg. brick well; laying 36-in. suction pipe; bldg. addition to pumping station, install two 300-h.p. water-tube boilers, one 10,000,000 to 12,000,000-gal. cross-com. high-duty pump, 40 tons lead, 1 1-2 tons caulking lead, furn. and laying and connecting new force mains | A. W. McCallum, Gen. Mgr., Wtr. Co. |
| Kansas | Halstead | May 25 | Constructing water works system to cost \$35,000 | Burns & McDonnell, Engrs., K.C., Mo. |
| Illinois | Chicago | May 27, 11 a.m. | Furn. and erect 2 vert. trip-expans. cond., self-contained, crank and fly-wheel pumping engines, each of 2,500,000 gals. capacity, 24 hours, inc. 25-tons electric crane | John J. Hanberg, Comr. Pub. Wks. |
| Kentucky | Madisonville | June 1, noon | Purchase of water works franchise | Jas. L. Brown, City Clerk. |
| Philippine Is. | Manila | June 1, noon | Furnishing 7,000 tons, c. i. pipe, hub and spigot; 56 tons 20-in. flexible joint and flange c. i. pipe; 2 tons flanged c. i. pipe; 200 tons c. i. specials; J. F. Chase, Ch. Engr. Dept. Sewers & Wtr. | H. L. Fischer, Sec'y Municipal Bd. |
| Virginia | Lawrenceville | June 1 | Sale of 25-year water and sewerage franchise; 2,400 people | City Clerk. |
| Massachusetts | Springfield | June 2, 2 p.m. | Laying 30-in. steel or c. i. pipe under bed of Conn. river | E. E. Lochridge, Ch. Engr., Wtr Bd. |
| Brit. Columbia | Vancouver | June 2 | Supply of water pipe for city | Wm. McQueen, City Clerk. |
| California | San Francisco | June 12 | Furn. 1,200 hydrants for auxiliary water system | Marsden Manson, City Engineer. |
| Philippine Is. | Manila | July 1, noon | Furn. gate valves, air valves, and fire hydrants for city | H. L. Fischer, Sec'y Municipal Bd. |
| BRIDGES | | | | |
| New Hampshire | Laconia | May 13, noon | Bldg. 2-span hwy. arch rein. concrete bridge, each span 65 ft. | Charles A. French, City Engineer. |
| Ohio | Dayton | May 13, 11 a.m. | Bldg. self-closing bridge over M. & E. canal 50 ft. long and provide 40-ft. waterway and 10-ft. towing path, and have 20-ft. roadway and two 6-ft. walks, plank, steel, concrete or creodone block floor; model to accompany all bids | Chas. W. Haines, Pres. Bd. Co. Com. |

BIDS ASKED FOR

| STATE | CITY | RECEIVED UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|--------------------------|--------------------|-----------------------|--|--|
| BRIDGES—Continued | | | | |
| Ohio..... | Cincinnati..... | May 14, noon..... | Rebuilding abutment on Lockwood road..... | Stanley Struble, Pres. Co. Comrs. |
| Ohio..... | O'Connell..... | May 15..... | Bldg. steel super. and concrete abuts. over branch Severn river. | W. M. Shield, Township Clerk. |
| New Jersey..... | Morristown..... | May 17..... | Bldg. \$2,500 bridge over Whippany to carry main sewer pipe, bridge to have 2 conc. piers in river faced with iron..... | Board of Sewer Comrs. |
| Georgia..... | Cedartown..... | May 17..... | Bldg. iron bridge over Cedar creek for Polk county..... | J. L. Moore, Chm. Bd. Rds. & Riv. |
| Ohio..... | Mansfield..... | May 17, noon..... | Furn. and erecting 84 ft. high truss bridge, 14-ft. roadway; abut. | Geo. H. Weidner, County Auditor. |
| Alabama..... | Birmingham..... | May 17, noon..... | Constructing one 90-ft. two 80-ft. steel bridges; also one 33-ft. and two 16-ft. reinforced concrete bridges; also one-half mile macadamizing..... | J. W. Gwinn Co., Engineers. |
| Ohio..... | Lima..... | May 18, noon..... | Constructing 177-ft. steel bridge Marion twp.; cost, \$7,000; also 90-ft. concrete bridge and 2 45-ft. arches..... | C. E. Craig, Eng., Allen Co. |
| Quebec..... | Burnstown..... | May 18..... | Bldg. concrete arch bridge over Dochart creek..... | John McGregor, Clk. McNab twp. |
| Ohio..... | Massillon..... | May 20, 10 a.m..... | Bldg. concrete bridge of two 60-ft. spans, 47 ft. wide..... | M. W. Oberlin, County Auditor. |
| South Dakota..... | Mitchell..... | May 20..... | Bldg. steel bridge 80 ft. long; pile 32, 18 and 24 ft. long..... | H. B. Anderson, County Clerk. |
| Quebec..... | Gaspe..... | May 21..... | Bldg. steel superstructures of 14 bridges and trestles, total length 4,900 ft. to be built by Atlantic, Quebec & Western Ry..... | New Canadian Co., Ltd. |
| Indiana..... | Greenfield..... | May 22, 10 a.m..... | Constructing Benford Bridge..... | C. H. Troy, County Auditor. |
| Michigan..... | St. Joseph..... | May 24, 2 p.m..... | Bldg. \$1,000 bridge over Yellow creek..... | Herman Radke, Royaltown. |
| Massachusetts..... | Newburyport..... | May 24, 10 a.m..... | Rebldg. old Chain bridge, inc. removing parts of old structure and bldg. new anchorages, cables, trusses, towers, steel floor beams, wooden floor with short solid fill between rein. concrete walls; length of suspended span, 226 ft.; old bids rejected..... | James P. Hale, Clk. Co. Comrs., Salem. |
| Ontario..... | Mountain P.O..... | May 29, noon..... | Bldg. 2 rein. concrete arch bridges and 2 rein. concrete piers..... | Alex. Christie, Commissioner. |
| Pennsylvania..... | Franklin..... | May 29..... | Erecting new bridge over French creek 987 ft. long..... | E. K. Smiley, Clk. Co. Comrs. |
| Ohio..... | Columbus..... | May 29, 11 a.m..... | Bridge work per Report 2305; concrete bridge, Orange twp..... | Wm. F. Black, Clk. Co. Comrs. |
| Ohio..... | Dayton..... | May 29..... | Bldg. sub. and superstructure of bridge over Bear creek..... | Bd. County Comrs. |
| Ontario..... | Ottawa..... | May 31..... | Abutments, approaches, etc., new bridge on Dideau Canal..... | L. K. Jones, Sec'y Dept. Rys. & Canals |
| Ohio..... | Toledo..... | June 4, 10 a.m..... | Labor and material for superstructure of bridge over Swan creek Co. Road No. 125, Waterville twp.; also for 2 concrete abutments and for repair of bridge, E. Jerusalem twp..... | D. T. Davies, Jr., County Auditor. |
| Texas..... | Galveston..... | June 28, noon..... | Building a causeway across Bay between Galv. Island and Virginia point, 10,642 ft. long, arch bridge, 2,742 ft. long; lift bridge to have clear span of 100 ft. and roadway will be 8,170 ft. long; bids in 3 parts: arch bridge, lift bridge and roadway..... | John M. Munch, County Auditor. |
| Ohio..... | Toledo..... | July 1, noon..... | Labor and material for rein. concrete arch bridge (except lift draw); also foundations, piers, apparatus, etc., for bridge over Maumee river at Main st.; \$525,000 available; check, \$50,000. | Reynold Voit, Sec'y Bd. Pub. Serv. |
| LIGHTING AND ELECTRICITY | | | | |
| South Carolina..... | Fernie..... | May 13, 5 p.m..... | Bldg. electric light and power system, inc. distributing system, bldg. power house and foundation, removing power plant and installing in new station with boilers; furn. three 150 horse-power engines stack, etc..... | R. Potter, City Engineer. |
| Ohio..... | Lorain..... | May 13..... | Lighting sts., etc., old bids of Feb. 20 rejected..... | A. W. Thomas, Clk. Bd. Pub. Serv. |
| Oregon..... | Portland..... | May 14..... | Light sts., aves., bldgs. and public places with incandescent lights for 3 or 5 years; also bldgs. with gas, etc..... | A. L. Barbur, City Auditor. |
| Indiana..... | Rushville..... | May 14, 7:30 p.m..... | Constructing extension to municipal electric light plant..... | S. G. Gregg, City Clerk. |
| Missouri..... | Sedalia..... | May 17..... | Lighting sts. and other public places for 10 yrs. from Nov. 1, with magnetite lamps..... | J. L. Babcock, Pres. City Council. |
| Ohio..... | Toledo..... | May 18, noon..... | Remodeling steam heating mains in tunnels of State Hospital..... | Geo. R. Love, Supt. State Hospital. |
| Pennsylvania..... | Wilkes-Barre..... | May 20, noon..... | Lighting certain streets with electric arc lights..... | Fred. H. Gates, City Clerk. |
| North Carolina..... | Wilmington..... | May 20, noon..... | Lighting city with gas or electricity..... | W. E. Springer, Mayor. |
| Ohio..... | Columbus..... | May 21, noon..... | Labor and material for addition to power house State Univ..... | Carl E. Stub, Sec'y State Univ. |
| Ohio..... | Toledo..... | May 22, noon..... | Furn. and install. 2 duplicate elec. generators, 100 kw. each; 2 vert. 3-cylinder gas engines, switchboard, etc..... | Reynold Voit, Sec'y Bd. Pub. Serv. |
| Pennsylvania..... | Butler..... | May 25..... | Lighting town, etc., no restriction on style of light..... | Chm. Schnitzer, Lighting Com. |
| New York..... | Brooklyn..... | May 26, 11 a.m..... | Pump, eng. and power plant for operating Gowanus flush tank..... | Bird S. Coler, Boro. President. |
| Ohio..... | Bridgeport..... | June 1..... | Lighting village over 4,000 with gas or electricity..... | R. T. Michener, Village Clerk. |
| Pennsylvania..... | Bellefonte..... | June 1..... | Concrete dam, races, water-wheels, generator, also rebldg. power house, transmission line, motor-driven pump, etc., for municipal electric power plant..... | Borough Clerk. |
| Indiana..... | Vincennes..... | June 8, 2 p.m..... | Lighting sts. at expiration of existing contract Apr. 29, 1910, for 10 yrs. with 260 enclosed arc lamps of 2,000 c-p. equal to 466 watts each, or 7.5 amperes at 70 volts at lamp terminals; in addition 220 16-c-p. incandescent lamps must be placed ready for use; guaranty check, \$2,000..... | C. L. V. Tucker, Clk. Bd. Pub. Wks. |
| Massachusetts..... | Boston..... | July 1..... | Lighting sts. with gas for 5 years from Sept 15; 20 to 50 lights; bidders to furnish apparatus for practical tests..... | Guy C. Emerson, Supt. Streets. |
| MISCELLANEOUS | | | | |
| New York..... | New York..... | May 13..... | Rebldg. crib work and filling in bank, McComb's Dam Park..... | Henry Smith, Pres. Park Bd. |
| Indiana..... | Indianapolis..... | May 13..... | Completing Indianap. Newcastle & Toledo Elec. Ry. to Newcast. | Union Trust Co., Receiver for Ry. |
| West Virginia..... | Wheeling..... | May 14, 11 a.m..... | Furnishing, etc., 13,000 bbls. Amer. Portland cement, Dam 19..... | Capt. F. W. Alstaetter, Eng'r Corps. |
| Hawaii..... | Honolulu..... | May 14, noon..... | Furn. 25,000 bbls. Portland cement..... | E. E. Winslow, Eng. Corps., U. S. A. |
| Arkansas..... | Searcy..... | May 14..... | Enlarging and improving county jail..... | R. W. Crisp, County Judge. |
| Montana..... | Butte..... | May 15, noon..... | Erecting new county jail and temporary court house..... | Link & Haire, Architects. |
| Virginia..... | Richmond..... | May 17, 4 p.m..... | Purchase and removal of all coal and water gas tar, and crude ammoniacal gas liquor produced at city gas works for 2, 3, or 5 yrs. from July 1; tars per gal.; ammoniacal liquor on basis of 2,240-lb. ton, delivered at storage tanks in city..... | W. P. Knowles, Supt. Gas Works. |
| Ohio..... | Columbus..... | May 17, noon..... | Constructing \$75,000 garbage plant, complete, inc. chimney..... | E. W. Hirsch, Sec'y Bd. Pub. Serv. |
| New York..... | Yonkers..... | May 17..... | Furn. and installing vacuum cleaning system in City Hall..... | J. D. McIntyre, Sec'y Bd. C. & S. |
| Massachusetts..... | Boston..... | May 18, noon..... | Excavating new channel for Alewife Brook, 140,000 cu. yds. excavation; check, \$2,000; Metropolitan Pk. Comm..... | Jno. R. Rablin, C.E., Met. Pk. Com. |
| Ohio..... | Cleveland..... | May 18, noon..... | Constructing and operating st. railroads, 4 ordinances..... | Peter Witt, City Clerk. |
| Ohio..... | Cleveland..... | May 19, noon..... | Constructing and operating st. railroads, 4 ordinances..... | Peter Witt, City Clerk. |
| Illinois..... | Chicago..... | May 20, 11 a.m..... | Constructing public bath houses; also shelter platform for playgrounds..... | J. J. Hanberg, Com'r Pub. Works. |
| Ohio..... | Cleveland..... | May 20, noon..... | Constructing and operating st. railroads, 6 ordinances..... | Peter Witt, City Clerk. |
| Ohio..... | Kenton..... | May 24, 10 a.m..... | Dredging Lower Scioto river, Imp. No. 23; cost, \$6,000..... | James C. Poling, County Engineer. |
| Utah..... | Ft. Douglas..... | May 25..... | Bldg. garbage crematory and crematory bldg..... | Capt. T. R. Harker, Q. M. |
| New Jersey..... | Irvington..... | June 1..... | Scavenger service from June 1; \$500 bond..... | Mayor Glorieux. |
| California..... | San Francisco..... | June 10..... | Bldg. 2 sections sea wall, 1,300 ft. long; cost, \$200,000; Sec. 8, 300 ft. long, 32,000 tons rock fill, 4,000 bbls. cement; Sec. 9, 1,000 ft. concrete sea wall, inc. 1,000 ft. concrete bulkhead, 85,000 tons rock fill, 181 tons structural steel; 13,000 bbls. cement; structures go 30 ft. below city base..... | Secretary Thorp, Harbor Board. |
| Ohio..... | Columbus..... | July 15, noon..... | Bldg. concrete retaining wall; Contract No. 18, inc. 800 cu. yds. excav., 765 cu. yds. loam, 1 acre seeding, 220 sq. yds. sodding, 800 cu. yds. concrete, 2,000 lbs. twisted steel rods..... | E. W. Hirsch, Sec'y Bd. Pub. Serv. |
| Illinois..... | Chicago..... | Sept. 15..... | Furn. voting machines up to \$400,000 value..... | Election Commissioners. |

STREET IMPROVEMENTS

Anniston, Ala.—County Commissioner M. B. Wellborn is urging a \$300,000 bond issue for good roads.

Birmingham, Ala.—Council is considering the grading, guttering and sidewalking of Willow avenue, Twenty-eighth street and Madison avenue, and cement walks on Seventeenth street.

Birmingham, Ala.—Retiring Mayor G. B. Ward has recommended that the work of paving the entire city be recommenced and pushed.

Mobile, Ala.—The Board of Public Works has ordered an estimate prepared for the paving of Congress street; also received a petition for the paving of Georgia and Michigan streets.

Mobile, Ala.—Chief Engineer Wright Smith has estimated cost of paving Davis street at \$24,365; Spring Hill avenue, \$92,290; Broad street, \$34,900; Montauk avenue, \$10,399, and Hallett street, \$2,445.

Benicia, Cal.—City has decided to improve streets.—W. L. Crooks, Mayor.

Lincoln, Cal.—Citizens are considering ways and means whereby Placer County might build a public highway along modern lines to connect with the main Sacramento road leading into this county.

Nevada City, Cal.—Citizens are again considering construction of a road connecting Sierra County with this city.

Oakland, Cal.—Council has decided on the guttering and curbing of Thirty-sixth, Thirty-fifth and Thirty-second streets, and the regrading and macadamizing of Fifteenth and Clifton streets.—F. R. Thompson, City Clerk.

Pasadena, Cal.—Council is considering the oiling of Washington street, Concordia court, Rowland lane, South Grand avenue and Mercantile place.

Vallejo, Cal.—The Board of Public Works has passed resolutions for the paving of a number of principal streets.

Marysville, Cal.—Business men are urging that \$25,000 bonds for street improvement be included in issue to be voted on very soon.

San Anselmo, Cal.—Citizens on Ross avenue have raised funds for the improvement of that thoroughfare.

San Francisco, Cal.—The Peralta Heights and Vicinity Improvement Club has agreed to ask the Finance Committee of the Supervisors to appropriate \$300 for the repair of York street from Army to Peralta avenue.

Waterbury, Conn.—City is considering the construction of a brick and bitulithic pavement on four streets; cost, \$9,000.—R. A. Cairns, City Engineer.

Georgetown, Del.—Millsboro and this city combined will build a gravel road in the eight miles between the two towns.

Washington, D. C.—Upon the recommendation of Engineer Commissioner W. V. Judson, the District Commissioners have ordered the resurfacing of the roadway of I street, N. W., at a cost of \$6,000.

Ft. Pierce, Fla.—Citizens have defeated proposition to issue \$150,000 bonds for road improvements; another election will be held soon.—G. E. Fultz, Clerk Board of Commissioners St. Lucie County.

Pensacola, Fla.—Governor Glichrst has approved bill relating to the improvement by the city of its streets and alleys.

Pensacola, Fla.—Council has adopted ordinance for the paving and grading of certain streets and has ordered bids advertised for the work.

Perry, Fla.—Bids will be received May 20, noon, for \$15,000 street improvement bonds.—John C. Calhoun, Clerk Board of Trustees.

Augusta, Ga.—Washington and Meriwether Townships in Edgefield County across the river are in favor of the issuance of township bonds for the building of a main graded highway from about Parkville, S. C., thirty miles up the river, to the county line, about six miles above Augusta, and a branch or main road through the northern and eastern part of Meriwether Township.

Griffin, Ga.—Citizens have voted bonds for street improvements.

Boise, Ida.—City is considering the paving of forty business blocks during the summer.

Sandpoint, Ida.—Bids for building the Whitcomb and Hasselroth road have been rejected as being too high, the lowest bid being for \$3,400.

Aurora, Ill.—Bids will be received May 12, P. M., for renewal of the roadway of the North avenue bridge.—A. M. Anderson, N. J. Knur and C. R. Taylor, Committee on Railroads and Bridges.

East St. Louis, Ill.—Council has passed ordinances calling for the laying of granite sidewalks on Fifteenth street, Ohio avenue, Eighteenth, Thirteenth, Seventh and Eighth streets.

Jacksonville, Ill.—City is considering the

paving of three streets with brick.—E. M. Henderson, City Engineer.

Lawrenceville, Ill.—Citizens have voted to issue bonds for brick paving.—W. S. Titus, Mayor.

Bloomington, Ind.—The public square and the streets for one block each way from the square will be paved. This decision has been reached by the City Council and City Engineer U. S. Hanna has been ordered to draw up plans and specifications.

Evansville, Ind.—The Board of Works has prepared specifications for the paving of Jefferson and Adams avenues and Oakley street; Board decided to use Wadsworth macadam in paving Garvin street.

Fort Wayne, Ind.—Council has ordered plans for a pavement on South Wayne avenue.

Hammond, Ind.—Bids will soon be advertised for laying cement sidewalks on Murray street, three blocks of 30-foot brick pavement on Williams street, three blocks of 30-foot brick pavement on Doty street and about three-quarters of a mile of 30-foot macadam pavement on Gostlin street.—Otto Duelle, City Clerk.

Indianapolis, Ind.—The Board of Public Works is considering following improvement resolutions: Prospect street, Virginia avenue to Hunter street, cement walks, approach walks and sodded lawns; Prospect street, from Hunter street to first alley east of East street, cement walks, approach walks and sodded lawns; Blackford street, cement walk, and Keystone avenue, cement walk.

Indianapolis, Ind.—The Board of Works has confirmed resolutions for the following improvements: Carson street, cement walks and curbing; Butler avenue, cement walks; Commerce avenue and Ludlow avenues, cement walks and approach walks.

Mishawaka, Ind.—The Committee on Streets and Alleys has recommended the improvement of West Second, West Joseph, Union and Cedar streets; City Engineer has been ordered to prepare plans.

Rushville, Ind.—Plans have been prepared by Engineers Stewart & Kennedy for brick paving on Main and Second streets.

Grinnell, Ia.—Citizens will petition for the paving of 47 blocks of streets with bitulithic.

Marshalltown, Ia.—City is considering the laying of from twenty to thirty blocks of paving with concrete.—Wm. Brenner, City Engineer.

Hutchinson, Kan.—The Board of Commissioners has ordered permanent sidewalks constructed on numerous streets.—S. A. Poe, City Clerk.

Leavenworth, Kan.—The Board of City Commissioners has passed ordinances for the grading and paving of Osage street and the curbing of Chestnut street.

Crowley, La.—Council is discussing the Marks plan of laying concrete sidewalks in certain residence sections of Crowley by the city, the expense to be charged against the property owners affected.

New Orleans, La.—Council has rejected all bids opened April 19 for the paving of Carrollton avenue between St. Charles and City Park avenues.

Augusta, Me.—Citizens have voted to accept act passed by the Legislature providing for the elimination of the grade crossing at the foot of Rines hill.

Baltimore, Md.—Dustless suburbs is the aim of Col. Joseph L. Wickes, Commissioner of Street Cleaning; to secure them he is experimenting with a number of dust preventives for macadam streets; in addition to these trials Commissioner Wickes is advertising for proposals to furnish his department with 20,000 gallons of a preparation which he tried with much success on Park Heights avenue last summer; preparation, which is an oily mixture of tar, will be used on all the macadam streets in Walbrook, Forest Park, Irvington and other suburbs.

Baltimore, Md.—The members of the Old Town Merchants' and Manufacturers' Association are advocating numerous improvements to streets in the neighborhood of Hillen Station; some are the widening of Saratoga street, between Gay and Holiday streets, the paving of Exeter street from Eastern avenue to Hillen Station and the paving of Gay and High streets.

Baltimore, Md.—Lauraville citizens have petitioned Highway Commission to improve Gundon lane.

Baltimore, Md.—Bids will be received May 17, noon, for \$500,000 4 per cent annex loan issue.—J. M. Littig, President Board of Commissioners of Finance.

Baltimore, Md.—City is considering the improvement of Charles street from University Parkway to the city limits.

Bel Air, Md.—Harford County Commissioners have decided to permanently improve the county road known as the Black Horse-Shawsville road.

Bethesda, Md.—Bethesda District will

vote May 17, on \$25,000 bonds for road improvements.

Cumberland, Md.—Council has passed ordinances providing for paving Fayette street with vitrified brick and for paving and recubing Bedford street.

Lawrence, Mass.—Another call will be issued for bids for the paving of Essex street, as the Mayor does not think it fair to open bids and give them publicity since the paving ordinance was not passed by Council.

Lowell, Mass.—Council has concurred with Board of Aldermen in voting the \$64,600 loan order over the Mayor's veto; order calls for money for paving portions of Merrimack, Bridge and Middlesex streets.

Malden, Mass.—Council has authorized a \$5,000 loan for new streets and \$5,000 for sidewalks.

Newburyport, Mass.—J. H. Johnston, Superintendent of Streets, has recommended purchase of 72 barrels of Tarvia.

Calumet, Mich.—Citizens have petitioned for the paving of Hancock and Franklin streets.

Detroit, Mich.—Council has directed the Department of Public Work to advertise for proposals for paving West End avenue; estimated cost, \$21,066; also Kirby avenue, \$7,543.—J. J. Haarer, Commissioner.

Lansing, Mich.—City is considering the laying of about 6,000 yards of brick and concrete paving.—H. A. Collar, City Engineer.

St. Joseph, Mich.—Council will make appropriations for asphalt, macadam and brick paving in two streets.—W. J. Cleary, City Engineer.

Duluth, Minn.—The Board of Public Works has rejected bids for paving Fourth street; specifications will be changed and new bids asked; A. G. Osman, with a bid of \$54,944.75, was the low bidder.

Duluth, Minn.—Nearly 30 miles of sidewalk will be constructed in city this year; most of it will be cement, as there is an ordinance which requires that no wooden walks shall be built within certain limits, and this means that within the course of the next few years there will be nothing but sidewalks of cement or equally suitable material in the leading residence and business districts; Board of Public Works is now considering the first of the sidewalk contracts, and from now on there will be something in connection with sidewalk construction to come up at every meeting.

Minneapolis, Minn.—County Commissioners have decided to construct a granite macadam wagon road from this city to New Brighton and the Armour plant.

Roseau, Minn.—Council has been petitioned to construct ten blocks of cement walks.

Sauk Rapids, Minn.—Council has ordered 8½ blocks of tile sidewalk.

Chillicothe, Mo.—Contract was not awarded April 19 for the paving of Jackson avenue.—Beul Wigely, Auditor.

Kansas City, Mo.—City has decided to pave several streets.—J. L. Darnell, City Engineer.

Florence, Neb.—Council has adopted specifications for the paving of Main street.

Grand Island, Neb.—City will expend about \$70,000 for brick paving.—Jay C. Tefler, City Engineer.

Ralston, Neb.—Bids are being asked and property owners signed up for laying 9,000 feet of cement walks.

Atlantic City, N. J.—Mayor Stoy has signed ordinance providing for a \$20,000 bond issue for street paving; avenues are to be paved with bitulithic and will include several in the First and Fourth wards.

Collingwood, N. J.—Councilman A. K. Roberts has made known a plan for the improvement of the unpaved streets of the town; formerly Council awarded contracts to contractors who let sub-contracts, but plan is to let borough be the real contractors and such sub-contracts as are necessary will be let by it; a steam roller is an imperative necessity; cost will not exceed \$30,000.

Hackensack, N. J.—Citizens have voted \$60,000 bonds to macadamize nearly every street in town not so improved.

Haddonfield, N. J.—Council is considering establishment of grades on Springfield terrace, Belmont, Roberts, Prospect and Wellington avenues; also sidewalks on Avondale avenue.

Irvington, N. J.—Council is considering an ordinance providing for sprinkling the streets with oil.

Irvington, N. J.—Councilman David H. Greene has declared himself in favor of bonding the town to the limit for the purpose of street paving.

Jersey City, N. J.—The Board of Street and Water Commissioners is considering the improvement of Mill road.—G. T. Bouton, Clerk.

Ocean City, N. J.—Council has passed an ordinance providing for the construction of a boulevard extending from the water's edge along the bay from Seventh street to

the Ocean City Bayou between Sixteenth and Eighteenth streets.

Paterson, N. J.—City will expend this year \$68,574 for asphalt paving; \$31,475 for wood block and \$5,390 for granite block; the Board of Works has decided to pave eleven streets with asphalt; three streets with wood block, and two streets with granite block; about \$10,000 will be expended.—H. J. Harder, City Engineer.

Paulsboro, N. J.—Council will pave Delaware street; material not yet decided on.

Plainfield, N. J.—City is considering the laying of about a mile of macadam paving.—Andrew J. Gavett, City Engineer.

South Orange, N. J.—Township Committee has passed ordinances for the laying of flag or cement walks on Valley street, Oakview avenue, Delaware avenue, Elmwood avenue, Plymouth avenue, Ridgewood road, Madison avenue and Highland place.

Trenton, N. J.—Council has passed an ordinance for the paving of Olden avenue; also adopted ordinances for the repaving of Lambert street and the establishment of a grade on Daniel street.

Amsterdam, N. Y.—City will pave 7,000 square yards with brick.—F. E. Crane, City Engineer.

Arcadia, N. Y.—Town will expend \$5,700 on general improvements of streets.—J. D. Reeves, Town Superintendent of Streets.

Auburn, N. Y.—The Board of Supervisors has approved a \$6,000 bond issue for good roads in the town of Moravia.

Elmira, N. Y.—City will lay 20,000 square yards of brick or asphalt paving on five streets.—Thurber A. Brown, Acting City Engineer.

Carthage, N. Y.—Village Trustees have decided to expend \$6,000 for street improvements.

Geneva, N. Y.—The Board of Public Works has selected Metropolitan brick as the material to be used in the paving of Washington, Elm, Colt and Canal streets.

Niagara Falls, N. Y.—Estimates are being prepared for the paving of Ontario avenue and Thirteenth street from Pierce to South avenue.

Niagara Falls, N. Y.—City Engineer R. A. McClanathan estimates the cost of resurfacing Main street at \$14,623; paving of Falls street and Pine avenue is being considered.

Oneida, N. Y.—City is considering the paving of a street with brick.—G. S. Tibbitts, City Engineer.

Rochester, N. Y.—Council will consider the paving of Dewey avenue from Augustine street to the city line.

Schenectady, N. Y.—Council will consider a petition for the extension of Franklin street.

Syracuse, N. Y.—City Engineer H. C. Allen has estimated cost of resurfacing North Salina street at \$22,535 if asphalt is used; \$61,650 for sandstone or creosoted block; \$40,030 for vitrified brick or block, and \$15,880 for macadam pavement; James street, \$21,000 for sandstone or creosoted wood block with stone curb, \$19,750 with cement curb; \$15,200 for asphalt sheet, vitrified brick or block, bitulithic or bituminous macadam, with stone curb; same with cement curb, \$14,300; macadam, with stone curb, \$9,620; same with cement curb, \$9,050; next section, from the center line of Union avenue to Laurel street, for sandstone or creosoted wood block, with stone curb, \$16,020; same with cement curb, \$14,860; asphalt sheet, vitrified brick or block, bitulithic or bituminous macadam, with stone curb, \$11,690; same with cement curb, \$10,855; macadam, with stone curb, \$7,420; same with cement curb, \$6,885; from the center line of Laurel street to Butternut street, sandstone or creosoted wood block, with stone curb, \$9,300; same with cement curb, \$8,680; asphalt sheet, vitrified brick or block, bitulithic or bituminous macadam, with stone curb, \$6,645; same with cement curb, \$6,205; macadam, with stone curb, \$4,050; same with cement curb, \$3,775; asphalt sheet, bitulithic or bituminous macadam, with sandstone block on the sides on grades exceeding 4 per cent, with stone curb, \$7,850; same with cement curb, \$7,260.

Syracuse, N. Y.—The advantage of having become a part of the City of Syracuse is being impressed upon the property owners of the Huntley tract by City Engineer Henry C. Allen, who now has a surveying party in that section establishing grades for more than two miles of cement sidewalks which have all been ordered by Council since the first of the year.

Troy, N. Y.—The Board of Contract and Supply has adopted resolution directing City Engineer to prepare specifications for the repaving of King and River streets.

Wellisboro, N. Y.—Citizens have voted to issue \$17,000 bonds for additional paving; bids will soon be received.

Marshall, N. C.—Dudley Chipley, Engineer, Board of Internal Improvements, will prepare plans for street improvements; \$25,000 is available.

Bowling Green, O.—A petition for the

macadamizing of the Otsego pike has been allowed by the County Commissioners; when macadamized along its seven miles through Milton and Weston townships, it will afford a stone pike to Bowling Green from Hoytville, Custar and Milton Center, as it will connect six other stone roads.

Bucyrus, O.—City is planning to go into the street improvement business this summer; if all the improvements which have been petitioned for are made, city and property owners jointly will be called upon to pay approximately \$87,000 for street paving.

Cleveland, O.—City will expend \$1,000,000 on street improvements this year, practically all of which will be vitrified brick; \$100,000 will be spent on improving County roads leading into city.

Dalton, O.—F. E. Myers, 200 North Market street, Canton, has prepared plans, estimates and specifications for 4,440 linear feet of vitrified block paving comprising 16,257 square yards paving with 9,011 linear feet of curbing for Main street.

Dayton, O.—Council has decided to improve Rubicon and Helena streets and to establish grades on several streets.—C. P. Floyd, Clerk.

Dayton, O.—City Engineer Cellarius has reported that \$2,335.50 will be the cost of resurfacing Central avenue from River street to Grand avenue, as desired by the property owners.

Defiance, O.—Council has decided to issue \$65,000 improvement bonds to cover the street paving and other municipal improvements to be made in the city this coming summer.

Hamilton, O.—County Commissioners have decided to improve 1½ miles of the Hamilton and Gregory turnpike in Fairfield Township; estimated cost, \$7,356.

Hamilton, O.—County Auditor J. E. Brate has received from State Highway Commissioner James C. Wonders, of Columbus, an estimate for the improvement of the 7,200 feet of 1.36 miles of the Hamilton and Gregory's Creek turnpike leading past the fair grounds; total cost, \$6,939.49.

Lima, O.—Legislation by resolution authorizing the Board of Public Service to let contracts for the paving of 13 streets on a single day will be passed by the City Council; contracts will involve an expenditure of \$425,000 and very soon Council will pass legislation for 13 additional streets not embracing so much footage, but which will bring the total estimated city improvements to \$550,000, of which the city's share alone is \$105,000, bonds for which are to be sold later.

New Berlin, O.—F. E. Myers, Canton, is preparing plans, specifications and estimates for grading Portage street.

New Philadelphia, O.—Plans for the new paved road from East avenue corporation line, 1.49 miles southeast on the Plains road, has been approved and all the details preparatory for advertising for bids for the construction of the same closed up by the County Commissioners and Assistant Highway Commissioner Sites in this city; bids will be called for and the contract will be let jointly by the Commissioners and the State Highway Commission.

Piqua, O.—Council has passed ordinance to issue \$30,000 bonds for paving High street and \$12,000 bonds for paving Caldwell street.

Port Clinton, O.—Walter Miller, A. R. Dolph and Fred E. Weis have been selected by the Trustees of Harris Township as a commission to select the roads to be improved in that township; nearly all the roads will be improved under a bond issue of \$100,000; contract for the first five miles will be let this year.

Rawson, O.—Village is considering various street paving.

Sandusky, O.—Bids will be received May 24, noon, for \$22,000 4 per cent semi-annual street improvement bonds.—Jos. Loth, Jr., City Auditor.

St. Mary's, O.—City will lay 20,000 square yards of brick paving.—F. C. Keuthan, City Engineer.

Toledo, O.—Council has decided to grade and pave Delaware avenue and to repave Huron street.—J. M. Babcock, Clerk.

Van Wert, O.—Plans have been completed by City Engineer J. C. Ballard for paving North Washington street with brick or vitrified brick and block pavement and filler; bids will be received by the Board of Public Service as soon as appropriations have been made.

Wellsville, O.—The Board of Public Service, Engineer George, will advertise for bids for the paving of Seventeenth street.

Muskogee, Okla.—County Commissioners will submit a \$450,000 bond issue to the voters of Muskogee County; of this amount \$225,000 is for road and bridge purposes.

Muskogee, Okla.—Council has rejected bids received for constructing 21,000 feet of sidewalk on South B street; new bids will be advertised for.

Ashley, Pa.—Council is considering the

macadamizing of road from Bly and Joyce's houses to Main street.

Bradford, Pa.—City is considering construction of 340 feet of brick paving.—A. F. Bannon, Jr., City Engineer.

Butler, Pa.—Residents of Summit Township are urging the construction of an improvement highway from the Kittanning pike through to East Butler.

Chester, Pa.—Council has adopted resolution for the paving of Eighth and Ninth streets and Morton avenue; also grading Fifth street from Penn street to Edgmont avenue.

Clearfield, Pa.—George C. Kirk, Luthersburg; H. E. Ginter, DuBois, and John C. Barclay, Clearfield, have laid out a new route for the public road from West side of Boggs Ford bridge above town to near the M. E. church at Centre; road goes from the bridge across railroad, up through Hyde on Washington avenue and across to the present road.

Greenville, Pa.—The Paving Committee is considering the paving of 2¾ miles of streets; cost, \$80,000.

Harrisburg, Pa.—The Finance Committee has reported back favorably the following ordinances: Paving Briggs and Eighteenth streets; opening Seventeenth street and paving Seventh street.

Hazleton, Pa.—The Taxpayers' Association has erected a crusher at the intersection of the Butler-Hollywood road and will macadamize the road from that point to Milnesville.

Jermyn-Mayfield, Pa.—Borough Council has decided to purchase a carload of flagstones and lay several new walks.

Norristown, Pa.—City will lay about three blocks of brick paving.—S. C. Corson, City Engineer.

Scranton, Pa.—Mayor John Van Berger, Jr., has signed ordinances asking estimates for the repaving of Court street, paving of River street, extension of Wayne avenue and ordering plans for the paving of Poplar street.

South Bethlehem, Pa.—Borough Engineer Neumeyer has estimated the grading and macadamizing of Lehigh street at \$2,400.

South Bethlehem, Pa.—The Street Committee will secure an estimate of the cost of paving New street with brick; Chairman Rankey of the Committee has submitted a report recommending street improvements, street repairs, purchase of street signs and repairs to road roller.

Sugar Notch, Pa.—Borough Council has ordered the paving of Main street.

Swissvale, Pa.—Borough will vote May 15 on increasing indebtedness by \$100,000 for the grading and paving of streets and the installation of a sewer system.

Upland, Pa.—Borough has decided to curb, pave and gutter Main street from Eighth to Third street.

Versailles, Pa.—Borough Council has adopted specifications for paving Walnut street.

Warren, Pa.—Street Committee has been instructed to advertise for bids for paving Liberty street from Third to Fourth street.

Westmont, Pa.—The first step in a plan which contemplates the eventual paving with concrete of every street in the municipality was taken by Council when it passed an ordinance authorizing the paving of a number of thoroughfares and the issuance of bonds in the sum of \$10,000 to cover the cost of the proposed improvements.—V. S. Doebler, Burgess.

Wilkes-Barre, Pa.—Council is considering the improvement of the street intersection at Hallenback avenue and Madison street; also an ordinance authorizing Street Committee to advertise for bids for repairing brick paved streets and for cutting down North Main street hill.

York, Pa.—The Highway Committee has recommended ordinance for the paving of East Market street.

Providence, R. I.—Council is considering the oiling of Branch avenue.

Spartanburg, S. C.—Council has received many requests for street improvements.

Celina, Tenn.—House has passed Senate bill authorizing Clay County to issue turnpike bonds.

Clarksville, Tenn.—Legislature is considering a bill to authorize the issue of \$25,000 street improvement bonds.

Johnson City, Tenn.—Plans are being matured for the building of a macadam road from Johnson City to Free Hill, distance of twelve miles north of this place; project is to be carried out through the organization of a stock company composed of S. C. Williams, J. A. Summers, Isaac Harr, W. V. DeVault, G. C. Hale, D. C. Swadley, A. R. Johnson, J. B. Cox, C. C. Cox, W. F. Carter and others.

Knoxville, Tenn.—The Legislature has passed bill authorizing city to issue \$50,000 bonds for widening streets.

Nashville, Tenn.—Citizens of West End avenue are now behind an effort toward asphaltizing the unpaved portions of the avenue, and it is now probable that within a few months all the unpaved portions will

receive a coating of hard oil, thus opening a bitulithic and asphalt driveway leading all the way out from East Nashville, when the new bridge shall have been finished, to the extreme West End, and on to Belle Meade.

Austin, Tex.—The new Austin Commission is planning extensive street improvements; first paving will be on East and West Sixth street; city has purchased a new gravel pit and will place gravel on many of the other streets.

Dallas, Tex.—Commissioner Doran will purchase rock for the repair of seven streets paved with rock or other macadamizing materials in the year past.

Galveston, Tex.—City Engineer Dickey will prepare estimates of material and cost for shelling a number of streets.

Houston, Tex.—City will spend \$1,000,000 this year on paved streets, sewerage, wharves and slips.—H. B. Rice, Mayor.

Lockhart, Tex.—Caldwell County has voted \$15,000 bonds for road improvements.

McKinney, Tex.—Citizens will vote May 31 on bonds for street improvements.

Manchester, Va.—The Board of Aldermen has approved ordinance providing for the issue of \$40,000 bonds for street improvements.

Petersburg, Va.—The County Supervisors have accepted bid of Woodin, McNear & Moore, Chicago, for \$30,000 bonds for road improvements.

Roanoke, Va.—Board of Supervisors has decided to construct a 7-mile road connecting Roanoke with Cloverdale; cost, \$20,000; convict labor will be used.

Bellingham, Wash.—Whatcom County will build nearly 125 miles of good roads this season; cost, \$250,000.

Medical Lake, Wash.—Plans and specifications are being prepared for the paving of a portion of Lake street.

Puyallup, Wash.—City will spend \$65,000 on street improvements.

Seattle, Wash.—City Engineer R. H. Thomson has made an estimate of the cost of the Dearborn street improvements which include the erection of a steel bridge over Dearborn at Twelfth avenue South, at \$426,000; also estimated cost of plankling Fairview avenue at \$15,000; Hanford street, \$23,000, and grading and curbing Thirty-first avenue South, \$22,600.

Seattle, Wash.—The Board of Park Commissioners has adopted the changes suggested by Park Engineer Samuel C. Lancaster for a change of the Olmsted Park and boulevard plans, providing for a sea-side boulevard to Magnolia Bluff.

Vancouver, Wash.—Council has passed an ordinance providing for the paving of Washington street.

Walla Walla, Wash.—Council has given final reading to ordinance providing for the grading of Merriam street.

Elm Grove, W. Va.—Residents living along the road leading from the Grove up Big Wheeling Creek have raised \$1,500 which will be used to repair the road; a distance of four miles will be graded and macadamized.

Wheeling, W. Va.—Residents of New Jersey avenue have been informed that a large amount of brick paving will be done on that thoroughfare.

Beloit, Wis.—City has decided to advertise for bids at once of half mile of macadam paving.—Robert Caldwell, City Engineer.

Beloit, Wis.—City will pave with block a bridge 255 feet long.—Robert Caldwell, City Engineer.

Janesville, Wis.—Council is considering the improvement of North High street.

Milwaukee, Wis.—The Board of Public Works is considering the improvement of various streets this summer.—Chas. J. Poetsch, Chairman.

Racine, Wis.—Among the public improvements this year will be the laying of 1,482 square yards of brick paving on East State street, from the St. Paul road's viaduct on Main street; 6,880 square yards of brick paving on Sixth street, from Main to Grand avenue; 14,632 square yards of brick paving on Main street; 375 square yards of macadam on Mead street, and 3,704 square yards on Packard avenue; a large amount of grading, curbing and sewer work is also to be done.

Sheboygan, Wis.—City is considering the improvement of several streets.

Bloomfield, Ont., Can.—Tenders will be received May 15 for the purchase of \$8,000 4½ per cent good roads and concrete walks debentures.—C. H. Saylor, City Clerk.

Merrickville, Ont., Can.—Ratepayers will vote May 17 on a by-law to issue \$10,000 20-year 4½ per cent sidewalk and drainage and street improvement debentures.—J. Johnston, Clerk.

Toronto, Ont., Can.—City is considering paving of portions of Clifford, Berryman, Dufferin streets, Highland and Atlantic avenues; cost, about \$27,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Birmingham, Ala.—C. P. Parson of Birmingham has contract at \$2,540.21 to construct South Park road, a distance of one and seven-tenths miles.

Fresno, Cal.—The Worswick Street Paving Company has secured the contract for paving portions of I and L streets for \$32,000.

Los Angeles, Cal.—The Board of Commissioners of Los Angeles County has awarded contract to Frank Gillespie at \$22,740 for grading, macadamizing, etc., on El Monte road.—C. G. Keys, County Clerk.

San Bernardino, Cal.—Council has awarded the contracts for the street improvements on Arrowhead avenue, formerly C street. The contracts let include all the work from Third street to the city limits on the north, and the low bids received for all this work were nearly \$3,000 less than the estimate of the engineers who have had charge of the plans.

The following are the successful contractors:

C Street Contracts.—Third to Ninth, awarded to Highway Construction Company, of Redlands, for \$22,066.42; Engineer's estimate, \$24,378.75. Ninth to Base Line, awarded to Johnson & Shay Company, of Riverside, for \$7,575.59; Engineer's estimate, \$7,760.54. Base Line to City Limits, awarded to Highway Construction Company for \$6,403.24; Engineer's estimate, \$6,775.08. Total cost of the improvement of C street from Third to city limits, \$36,045.25; Engineer's estimate, \$38,931.37, a saving over the estimate of \$2,889.12. All the bids in detail and submitted were:

Third to Ninth.—On the first section of the work, from Third to Ninth, the figures were:

E. R. Werdin.—Macadam, 9½ cents per square foot; butters, 45 cents per linear foot; culverts, No. 2, \$1.60 per foot; No. 14, \$1.40 per foot; No. 24, \$1.45 per foot. Johnson & Shay Company.—Macadam, 9 cents per square foot; gutters, 37½ cents per foot; culverts, No. 2, \$1.20; No. 14, \$1.10; No. 24, \$1.50 per foot. B. R. Davisson & Company.—Macadam, 9.2 cents per square foot; gutters, 44.5 cents per foot; culverts, No. 2, \$1.60; No. 14, \$1.45; No. 24, \$1.45 per foot. Highway Construction Company.—Macadam, 49 cents per square foot; gutters, 43.5 cents per foot; culverts, No. 2, \$1.78; No. 14, \$1.78; No. 24, \$1.68.

From Ninth to Base Line.—On the work from Ninth to Base Line the figures were: E. R. Werdin & Company.—Oil macadam, 9½ cents per square foot; oil tamped pavement, 4 cents per square foot; culverts, No. 3, \$1.45; No. 14, \$1.40. Johnson & Shay Company.—Oil macadam, 9 cents per square foot; oil tamped pavement, 3½ cents per square foot; culverts, No. 3, \$1.25; No. 14, \$1.10. Highway Construction Company.—Oil macadam, 8½ cents per square foot; oil tamped pavement, 4½ cents per square foot; culverts, No. 3, \$1.79; No. 14, \$1.78.

Base Line to City Limits.—On the third section of the work, Base Line to Sixteenth street, the bids were: E. R. Werdin & Company.—Macadam, 9.5 cents per square foot; surface oiling, 3.5 cents per square foot. Johnson & Shay.—Macadam, 9.3 cents per square foot; surface oiling, 2½ cents per square foot. Highway Construction Company.—Macadam, 8.79 cents per square foot; surface oiling, 2.74 cents per square foot.

San Jose, Cal.—Contract for 9,397 square yards bituminous paving, bids opened April 12, has been awarded to the City Street Improvement Co., of San Francisco, for \$23,708.—C. W. Pieper, City Engineer.

Bridgeport, Conn.—Although Alderman A. V. Hartley, as Chairman of the Council Committee on Streets and Sidewalks, May 4, signed the contract between the city and the United States Wood Preserving Company for furnishing wood blocks for the paving of Main street, there is still considerable doubt as to whether Main

street will be paved this year. The contract is conditional for it contains a clause providing for the delivery of the blocks when the Director of Public Works requests them. Another provision states that the contract shall not be binding upon the city, and is conditional upon the laying of grooved trolley rails by the Connecticut company. Therefore, if grooved rails are not laid no wood block pavement will be put down. The Connecticut company has prepared a proposition for the Common Council relative to grooved rails and trolley car barn ingress and egress facilities; it is believed that the company will agree to lay grooved trolley rails in Main street if the city will give the company permission to make track connections to its property from Congress street and Stratford avenue, with modifications of its original plan. Alderman Hartley also signed the contract for furnishing Mack brick for Golden Hill street and the sand, stone and cement.

Hartford, Conn.—The Board of Contract and Supply has awarded contract for resurfacing Capitol and Albany avenues and Market street, to the Southern New England Paving Company, at \$1.65 per square yard for asphalt, \$15.60 per cubic yard for asphaltic concrete and \$6.35 for Portland cement concrete.

Washington, D. C.—The contract for grading Sixteenth street, between Webster and Kennedy streets, northwest, has been awarded by the District to G. B. Mullin at 27½ cents a cubic yard of material moved. At this price the proposed work will cost about \$4,400.

Sanford, Fla.—Council has instructed the Street Committee to enter into a contract with the Georgia Engineering Company to put down additional brick pavement as follows: Sanford avenue to Tenth street, Tenth street to Park avenue, Park avenue to Commercial; Oak avenue, from First street to Third street; First street is to be extended to Cloud Creek on the west side, and Union avenue to Paint branch. This will give Sanford over fifty blocks of brick pavement.

Cairo, Ill.—Contract for paving with brick, 34th street, bids opened April 12, has been awarded to L. N. Johnson, Danville.—W. B. Thistlewood, City Engineer.

Hartford City, Ind.—Contract for 5,552 feet macadamized road in Washington Township, bids opened May 3, has been awarded to S. P. Willman, of Hartford City, for \$3,777.—L. W. Daugherty, County Auditor.

Indianapolis, Ind.—Bids for curbing in Kentucky avenue from the bridge across White River to Howard street, were received by the Board of Public Works May 3; owing to the fact that the Board has very little work contemplated, due to the new Thornton paving law, there was an unusually large number of bidders. Ten bids were received, ranging from 61 cents a linear foot, the bid of Dowd & Boulden, to 75 cents a linear foot. The curbing is part of a plan of the Board to pave Kentucky avenue. Under the new paving law the Board cannot order a single improvement, the cost of which will exceed 50 per cent of the assessed value of the real estate without improvements. As a result, the Board will divide the work into separate contracts for the curbing, gutters and lastly the pavement.

Vincennes, Ind.—Bids were opened upon the Buntin street improvement, and the contract was let in two sections, one contract for the work from First to Thirteenth, consisting of sidewalk and curbing only, and the other section from Thirteenth to Fifteenth street, which consists of grading and graveling sidewalk and curbing. A total of seven bids were presented, the figures in all of the bids being considered decidedly low and reasonable. The contract for the first section from First to Thirteenth was awarded to Foulkes, Forbes & Company, their bid being 9 cents for sidewalk, 9 cents for alley crossings and 38½ for curbing. The contract for the lower section from Thirteenth to Fifteenth street was awarded to Pennington, O'Donnell &

627; Hancock street, \$1,565.50; Connecticut street, \$21,135; total, \$34,692.70; on the five jobs O. C. Chapin bid \$560.20, \$7,854, \$2,628, \$1,606, and \$21,745, respectively, making a total of \$35,393.20.

The details of all bids received follow:

| | ALLEY | | TENN. ST. | | OHIO ST. | | HANCOCK ST. | | CONNECTICUT ST. | |
|--------------------------------------|--------|--------|-----------|--------|----------|--------|-------------|--------|-----------------|--------|
| | Ex. | Pav. | Ex. | Pav. | Ex. | Pav. | Ex. | Pav. | Ex. | Pav. |
| W. W. Gilmore, Topeka, Kan. | \$0.33 | \$1.34 | \$0.29 | \$1.27 | \$0.29 | \$1.27 | \$0.30 | \$1.27 | \$0.29 | \$1.27 |
| O. C. Chapin, Leavenworth, Kan. | .35 | 1.45 | .30 | 1.269 | .30 | 1.299 | .35 | 1.269 | .35 | 1.269 |
| N. E. Stucker, Ottawa, Kan. | .40 | 1.45 | .35 | 1.35 | .35 | 1.28 | .35 | 1.28 | .35 | 1.28 |
| Haskins & Ramsey, Topeka, Kan. | .40 | 1.40 | .33 | 1.27 | .33 | 1.28 | .33 | 1.28 | .33 | 1.28 |
| Thos. Jones & Son, Leavenworth, Kan. | .35 | 1.45 | .35 | 1.31 | .35 | 1.31 | .35 | 1.31 | .35 | 1.31 |

Bobe, their bid being 9 cents for sidewalk, 12½ cents for alley crossings, 39 cents for curb and 10 cents for embankment and 10 cents for excavation. The other bidders were W. H. Moore & Son, C. O. Thornberry of Sullivan, Chas. Hamke, Frank Jordan and Summitt & Piel.

Des Moines, Ia.—Jas. Horrabin has secured the contract for paving with brick a portion of Third street at \$1.34 per square yard, and J. W. Turner Improvement Company, Youngerman Block, the contract for paving with brick a portion of Center street at \$1.93 per square yard; bids were opened April 23 by Council.

Sioux City, Ia.—Council has awarded the contract, bids opened April 27, for paving with sheet asphaltum 13th street to the Bryant, Ford & McLaughlin Paving Company.

Leavenworth, Kan.—Ed. Jones got the contract to pave North Third street from Shawnee street to Pawnee with oil macadam at 89 cents a yard for paving and 34½ cents for grading. McGuire & Stanton got the contract to pave South Third from Walnut to Elm with oil macadam at 88 cents a square yard for paving and 34 cents for grading. O. C. Chapin got the contract to pave and grade Walnut from Seventh to Broadway with oil macadam at 88.7 cents a yard for paving and 35 cents for grading. Fred. Tarry was awarded the contract for curbing Elm street from the Esplanade to Fourth at 33½ cents a foot.

Baltimore, Md.—The Board of Awards has awarded contract to F. E. Schneider & Co., 332 Law Building, at \$6,993, for laying sheet asphalt on 24th street, between Maryland avenue and St. Paul street, and to P. Flanigan & Sons, Lexington and Calvert streets, at \$13,916 for laying vitrified bricks on Bellview avenue, between Garrison avenue and old city limits.—B. T. Fendall, City Engineer.

Baltimore, Md.—Bids for the paving of Chestnut Hill avenue, from Greenmount avenue to the Old York road, under the direction of the Annex Commission, were received by the Board of Awards, May 5, from the Warren Brothers Company and William M. Elder; the bids were on an alternative basis, and were referred for tabulation; the prices quoted on bitulithic paving by both bidders were considerably higher than usual, the Warren company asking \$2.55 a square yard on a concrete basis.

Detroit, Mich.—Council has awarded contracts as follows: To Ferdinand Porath & Sons, 878 25th street, for paving Scovel place with sheet asphalt, at \$6,978; to James W. Hanley, Peninsular Savings Bank Building, for paving John R street with sheet asphalt, at \$16,395; to T. E. Currie, Peninsular Savings Bank Building, for paving Moffat street, at \$11,971, and Helen avenue, at \$3,559, both with cedar blocks.—J. J. Haarer, Commissioner of Public Works.

Grand Rapids, Mich.—The Board of Public Works has awarded contracts as follows: For improving Lake avenue, to Kloote & Vanderveen, at \$7,523; Eastern avenue, to Dirk Mossell, at \$7,396.72; Giddings avenue to Kloote & Vanderveen, at \$9,973.—L. W. Anderson, City Engineer.

Sedalia, Mo.—Contracts for paving and curbing have been let by the city as follows: Brick paving, 8,000 yards, Midland Bridge Company, \$1.29 per yard; concrete curb, 1,500 feet, J. Ben Gorrell, 27½ cents per foot.—C. E. Baker, City Clerk.

Webb City, Mo.—V. E. Koch, 508 Main street, Joplin, Mo., has been awarded contract for vitrified brick paving, cement curbs and gutters and sidewalks.—A. J. McKenzie, City Engineer.

Bearcreek, Mont.—Gus Nash, of Red Lodge, has secured the contract for constructing cement sidewalks for about \$10,000.

Forsythe, Mont.—Frank Beley, of Livingston, has secured the contract for street improvements in Paving Districts Nos. 1 and 2 for \$7,412.

Belleville, N. J.—Contracts aggregating \$10,224.46 were awarded by the Township Committee; the awards were for curbing and flagging Honiss, Heckel, Magnolia, Clinton and Dow streets. An award was also made for supplying broken stone to the township at the rate of \$1.60 a ton.

Newark, N. J.—Bids were opened April 29 for the paving of the following thoroughfares with grouted granite block: Thomas, Christie, Main, Arlington, Augusta streets, and Orange place; awarding of these contracts was deferred.

Paterson, N. J.—The Road Committee of the Board of Freeholders considered bids for macadam of various thicknesses on numerous streets and decided to have it laid 4 inches thick; the lowest bids for this thickness were received from the following contractors: Hamburgh avenue, Samuel Braen; North Seventh street, to be done by the road inspector; North Eighth street, to J. S. Sowerbutt; Wayne avenue, to McKiernan & Bergen; Kearny street, to be

done by road inspector; Main avenue, Pasalic, J. S. Sowerbutt; Franklin avenue, Philip Kreamer; Seventeenth avenue, McKiernan & Bergen; East Twenty-seventh street, to be done by road inspector; Totowa road, not awarded; Newark and Pompton turnpike, W. A. Ferguson Sons; Black Oak Ridge road, Frank T. Torbet; Madison avenue, J. S. Sowerbutt; Tenth avenue, Samuel Braen; Cedar Grove road, Francisco Brothers; Belmont avenue, Wayne Contracting Company. Now that the lowest bidders have been selected, the committee will compare the cost with the appropriations, and if necessary a number of streets will be left unimproved for another year. The committee will recommend to the Board that most of the above contracts be awarded, and contractors will then be notified to begin with the work.

Trenton, N. J.—Only two bids were received by Common Council May 4 in answer to advertisements for proposals to lay pavements in Fall and Decatur streets. Each of the bids was from the Filbert Paving & Construction Company at the price of \$1.98 per square yard for asphalt, with a five-year guarantee, and \$2.38 with a ten-year guarantee. In this connection a petition was presented by Contractor Thomas J. McGovern, outlining the fact that the Street Committee had knowingly restricted possible competition by naming the product of the single company. Mr. McGovern's communication recited statements from eminent chemists to the effect that the proceedings were obviously unfair from a competitive standpoint.

Brooklyn, N. Y.—Bids were received as follows on April 28 for (a) regulating and grading Fourteenth avenue, from a point 170 feet north of Bath avenue to Eighty-sixth street, together with all work incidental thereto; (b) regulating, grading, curbing, and laying sidewalks on Twelfth avenue, from Sixty-third street to Sixty-fifth street, together with all work incidental thereto: (a) Transit Development Company, 85 Clinton street, Brooklyn, \$10,980; Norton-German Company, 303 Douglas street, Brooklyn, \$20,130; Daniel Douglas, \$23,424; James P. Graham, 2211 Eighty-fifth street, Brooklyn, \$13,452; (b) S. Purificato, 449 East 116th street, New York, \$3,868; Mangerl Company, \$5,071; N. Schneiders' Sons Company, 261 Seventy-ninth street, Brooklyn, \$4,587; The John J. Guinan Company, Gravesend avenue, Gravesend, \$4,639; Daniel Douglas, \$5,507.—Bird S. Coler, Borough President.

New York, N. Y.—The following are the totals of bids opened May 3 by John F. Ahearn, Borough President, for regulating and repaving with sheet asphalt pavement on concrete foundation Morningside avenue east from 114th street to Manhattan street, to include 18,450 square yards asphalt pavement, including binder course; 3,340 cubic yards Portland cement concrete, 3,950 lineal feet new bluestone curb, etc.: Asphalt Construction Company, 206 Broadway, \$44,564; Barber Asphalt Company, 30 Church street, \$42,318; Standard Asphalt & Rubber Manufacturing Company, 115 Broadway, \$46,510; Sicilian Asphalt Pavement Company, 41 Park row, \$46,705, and Uvalde Asphalt Pavement Company, 1 Broadway, \$47,723.

The following are the lowest bids for repaving on concrete foundation:

Barber Asphalt Pavement Company, 30 Church street, for paving Hudson street from Chambers to Beach street with wood block pavement, \$51,901; Eldridge street from Division street to Houston street, sheet asphalt, \$22,983; Rivington street from Cannon street to Bowery with sheet asphalt, \$37,030, and same company for Twenty-sixth street from First avenue to Madison avenue, \$25,532, and the Harlem Contracting Company, 2 Rector street, for paving Fort George avenue from Amsterdam avenue to St. Nicholas avenue with asphalt block, \$23,682.

Rochester, N. Y.—The Board of Contract and Supply has awarded contracts for paving as follows: North Water street, with Medina block, to F. C. Lauer & Sons Company, 458 South Clinton avenue, \$29,537; Edward street, with brick, to Clarence Alkenhead, at \$5,246; Flower City Park, with asphalt, to Whitmore, Rauber & Vincius, 279 South avenue, at \$20,469.

On April 30 contracts were awarded for paving as follows: Whitmore, Rauber & Vincius Company, 279 South avenue, asphalt on Plymouth avenue, \$35,539, and asphalt on Culver road, \$15,744; Rochester Vulcanite Paving Company, Alexander street and Erie Canal, with asphalt and Medina block, \$22,768; H. N. Cowles, 6 Gorsline street, brick and macadam on Lake View Park, \$18,728, and to Henry C. Schroeder with brick, Mount Vernon avenue, \$18,960.

Schenectady, N. Y.—The Schenectady Contracting Company has secured the contract for paving with asphalt Wright avenue at \$2.20 per square yard.

Utica, N. Y.—The Barber Asphalt Paving Company, 131 Union street, has submitted

the only bid to the Board of Contract and Supply for paving with asphalt portions of Jay, Square, Fulton streets and Kernan avenue; the bid was \$1.94 per square yard; estimated cost of improvements, about \$18,000.

Byesville, O.—Putnam & Price, of Marietta, O., have been awarded contract at \$40,000 for paving portions of seven streets.—Elmer E. Green, Village Clerk.

Cambridge, O.—The contract for furnishing about 28,296 square yards of paving block was awarded by the Board of Public Service, April 24, to T. B. Townsend Brick & Contracting Company, of Zanesville; Fultonham Brick Company, of Axline, and to the South Zanesville Sewer Pipe & Brick Company.

Canton, O.—The contract for paving 1¼ miles of road leading from Fairmount Children's home to within half a mile of the corporate limits of Alliance was let by the County Commissioners and State Road Commissioner Wonders to John C. Devine, of Alliance, for \$14,369. The improvement is the second one made under State aid, and when completed it will have cost about \$24,000, a former contract for the grading and 1,700 feet of paving having been completed by the McGinnity Construction Company, of Minerva. Five bids were submitted; the paving will be done with Alliance block. The unsuccessful bidders were: H. P. Hahn, Canton, \$15,350; McGinnity Company, of Minerva, \$14,798; A. P. Caldwell, Alliance, \$15,800; John Wilson, Alliance, \$15,145.

Columbus, O.—The Service Board as a result of the arguments made awarded G. Pugh the contract for the Ohio avenue job; his bid for this job was \$22,893. On the Oakwood avenue job D. E. Sullivan & Son were the lowest bidders, but irregularities have been found in their bid, and the Board may decide to throw it out altogether or readvertise for the work. In the event that the bid is thrown out, Contractor Pugh, who was second lowest bidder, is certain to get the work. The Sullivan firm bid \$39,312 for this job, and Mr. Pugh's bid was \$39,815. The question of the legality of the Sullivan bid has been referred to the City Solicitor, and it depends upon the decision rendered who will get this contract.

The Board of Service has awarded the contract for paving Stauring street from Parsons to Garfield avenue to M. J. Burns at his bid of \$3,412.40.

Columbus, O.—The Contract for paving Fourth avenue from High to Dennison was let by the Service Board to M. J. Burns at his bid of \$5,676.50; the work will begin within a few days and the Portsmouth paving block will be used.

Elyria, O.—The Ohio Engineering Company submitted to the Service Board the low bid for paving with brick East avenue with concrete base at \$29,035 and \$25,835 with macadam base, and with brick on East River street at \$8,137.

Massillon, O.—The Board of Public Service has awarded to Philip Diefenbacher & Sons the contract to construct the concrete sidewalks around the new City Hall.

Youngstown, O.—The Board of Public Service has opened bids as follows for paving with brick (a) Wick and (b) Delason avenues: Mullin, Miller & Caldwell, a \$8,863, b \$4,743; Joseph Hannon, a \$8,490, and Turner & Olson, (b) with asphalt block, \$7,035.

Youngstown, O.—The Directors of Public Service have let contracts for a number of improvements, as follows: Delason avenue paving, Turner & Olson, for \$7,034.78; Whitney avenue grading, Oscar Alm, \$527.20.

The following bids were opened April 29 by the Board of County Commissioners for turnpiking Section 2, Bear's Den road: L. H. Young, \$8,432; Ross O'Rourke, \$7,700; Joseph Hannon, \$9,814; E. E. Miller, \$8,611; James Colucci, \$7,561; G. A. Caldina & Company, \$7,777, and G. W. Ripple, \$7,593.

McAlester, Okla.—The Nolan-Draper Construction Company, McAlester, has been awarded contract for grading, paving, curbing and guttering sundry streets and avenues.—J. M. Gannaway, City Clerk.

Allentown, Pa.—The Commissioners of Lehigh County have awarded contract to rebuild the Bethlehem Pike to George H. Hardner, of Allentown, for \$32,450. Other bidders were: Edwards Brothers & Company, Yardley, \$71,145; George H. Clader, Allentown, \$34,936, and Weaver Contracting Company, Allentown, \$36,022; it will be 3¼ miles in length and is to be of trap rock; there will be 1,000 feet of concrete box gutters and 16,000 feet of stone gutters.

Bradford, Pa.—John Sheehan, city, has been awarded contract for paving Allison street and for brick and cement sidewalks.

Conemaugh, Pa.—The Clymer brick was favored from a large number of bidders by Council, when Manager C. W. Lenkard received a contract for one-half the brick to be used in paving this summer. The contract for the entire job of paving and grading was let to the Thiele Construction Company, of Johnstown, at the firm's bid

of 25 cents per square yard. This bid was 13 cents a square yard lower than the amount paid for the same kind of work last fall. The contract for the furnishing of the brick was let to the Williams Grove Company, of Clearfield, and the Clymer Brick & Fire Clay Company, of Indiana. The former's bid was \$17.50 and the latter's \$17.25 per thousand, and the Council made an equal division of the business. The streets for which contracts were let for the grading and paving include Main and Locust streets from First to Fifth street and Second, Third, Fourth and Chestnut streets and aggregate about 19,600 square yards. To pave these streets it will require about 900,000 bricks, making the total cost when completed for paving and brick in the neighborhood of \$27,000.

Erie, Pa.—Three proposals to supply the city with an asphalt mixing plant were received by Councils; proposals were called for by the city on two kinds of plants, stationary and portable, and each bid was accompanied by a \$500 check conditioned upon a contract being drawn if awarded.

The Iroquois Iron Company, of Buffalo, offer to build either a stationary or portable plant for \$15,950.

The F. D. Cummer & Son Company, of Cleveland, the lowest bidders, offer to furnish the city a stationary plant for \$10,200, or a portable one, without covering, \$10,500; with a roof the latter would cost \$10,900; this company claims to have a patented dry cylinder which adds greatly to the value of its plant.

The Warren Asphalt Paving Company, of East Cambridge, Mass., through its local representative, Horace B. Ash, submitted a bid of \$15,500 for stationary plant and \$14,800 for a portable one; this company claims that 80 per cent of the material in their plant would be the product of Erie labor.

All of the above bids were made on a plant having a capacity of 1,000 yards of asphalt a day. The plant must be installed 90 days after the contract is signed and will be paid for in three annual installments.

Ingram, Pa.—Bids were received as follows on April 5 by the borough for grading, curbing and paving 7,000 square yards, Prospect avenue. The contract was awarded to the Sawders Paving & Construction Company at \$13,814. Mack repressed block will be used on a machine slag and granulated base.—D. H. Hainer, Borough Clerk.

Kingston, Pa.—Contract for 15,000 square yards brick paving, bids opened May 3, has been awarded to Bolton G. Coon, 610 Second National Bank Bldg., Wilkes-Barre, for \$34,927.—Young & Wintermute, Second National Bank Bldg., Wilkes-Barre, Engineers.

Knox, Pa.—N. J. Boyer, of Butler, has received contract for street paving, which calls for 5,000 yards of paving.

Shamokin, Pa.—Robert Henson, of Geneva, N. Y., has secured the contract for 36,000 yards of brick paving in Shamokin for \$30,000.

Waynesboro, Pa.—Alba S. Kennel has been awarded contracts for a large number of concrete pavements and walks.

Windber, Pa.—The awarding of the contract for paving and curbing Seventeenth street, between Somerset avenue and the railroad crossing to Eureka No. 35 Mine, was made by Council May 4. The contract for the paving was awarded to Lowry & Mack, of Windber, whose bid was \$1.22 per square yard; to the same firm was let the contract for the curbing of the street, the bid being 60 cents per linear foot; paving block manufactured by the Kelly Brick Company, of this town, is to be used; the total cost of the job will be about \$5,000.

Park City, Tenn.—Contracts for grading certain streets preparatory to the spreading of macadam were awarded, Little & McBee being awarded Linden avenue and Lawson street, and Lanson Irwin received contract to grade Ivy and Summer streets; several other bids were received by Councilman W. H. Underwood, Chairman of the Street Committee, among them being proposals to do the entire street grading in Park City in the lump sum.

Galveston, Tex.—The County Commissioners have opened bids April 26 for extension of the Boulevard paving, sidewalk and seawall railing from Twenty-second street to Sixteenth street, and awarded to Kelso & Vantrien the contract for the brick paving at \$26,920, using Coffeyville, Kan., paving block, and to same company for sea wall railing at \$1,875.

Salt Lake City, Utah.—P. J. Moran has secured the contract for paving portions of B. A. Twelfth, E and Seventh streets for \$90,478. Bids opened by the Board of Public Works April 30.

Aberdeen, Wash.—Contract for furnishing a ten-ton steam road roller, bids opened April 21, has been awarded to J. I. Case Company, of Portland, Ore., for \$2,280.—P. T. Clark, City Clerk.

Aberdeen, Wash.—Seven contracts for street work were awarded: Andrew Peter-

son & Co. for filling and grading Market street, 60 cents per yard; for putting in sidewalks on M street to Holm and Johnson for 50 cents; the steam roller to J. I. Cast & Co., of Racine, Wis., for \$2,200.

Seattle, Wash.—The County Commissioners have awarded a contract for a road rock crusher at North Bend to the Polson Implement Company, agents for the Symonds rock crusher, at price of \$3,250, the identical price quoted eight weeks ago. Bids from six concerns were submitted.

Seattle, Wash.—The contract for asphalt paving on Crescent Drive was awarded to A. R. Gibson, 212 Twenty-first avenue, North, for \$26,234.45 and \$2,260.75 for maintenance. Contract for grading and paving on Twenty-third avenue, North, was let to A. R. Gibson for \$17,813.62; for maintenance, \$1,236.50. Contract for paving Franklin avenue was let to the Barber Asphalt Paving Company for \$4,416.25.

Andrew Peterson & Co., North Forty-second street and Wallingford avenue, were awarded the contract for grading, etc., on North and East Fifty-seventh street, et al., for \$32,019.50. The Elliott Bay Iron Works was awarded the contract for grading, etc., on Thirty-first avenue, South, et al., for \$48,797.02. Hans Pederson was awarded the contract for grading and concrete walks on Shelby street, et al., for \$22,052.40. Contract for grading and cement walks on Highland drive, et al., let to A. W. Yaw & Brother for \$5,432.20.

The contract for concrete walks on Florentina street was awarded to N. Jahn, Empire Building, for \$2,360.92. Contract for concrete walks on West Roy street, et al., was let to A. W. Yaw & Brother for \$1,042. Contract for concrete walks on Eighteenth avenue, Northwest, et al., were let to J. J. Liston, et al., for \$12,682.01. Address of Mr. Liston, 5248 Shilshole avenue, Northwest.

Walla Walla, Wash.—The bid of the Rich & Harris Construction Company for asphalt pavement on a 1:4:7 concrete base was, according to the majority report of the Street Committee to Council, found to be the lowest and best, and they were awarded the contract for improving the streets in the following six districts:

No. 37, West Main street from Ninth to O. R. & N. Depot; No. 38, North Second from Mill Creek Bridge to Oak street; No. 40, Rose street alley; No. 41, Rose street from Seventh to Colville; No. 43, East Rose street from Palouse to Colville street.

On District No. 42, Spokane street from Main to Rose, the committee recommended that all bids be rejected and that the City Clerk be instructed to readvertise for bids; the reason for this action is said to have been due to a desire on the part of Councilman J. F. Stack, who is the only interested property owner, that the Blome granite pavement be laid in that district.

Fond du Lac, Wis.—The lowest bid opened April 19 by the Board of Public Works for 13,900 square feet cement paving and 8,000 linear feet curb and gutter was submitted by McCugo Construction Company at \$1.17 per square yard.

Madison, Wis.—By a vote of 12 to 7, Council refused to go back on its established custom whereby the City Engineer is instructed to make street improvements in case the bids of contractors are higher than his estimates. Robert Mitchell had put in a bid of \$8,600 for the improvement of North Few street from East Gorham street to Sherman avenue; this was the only bid and \$400 above the estimate of Engineer Icke.

Tomah, Wis.—Tomah has settled her differences on the paving question, and the contract for the paving of Superior avenue after the boulevard plan has been let to Thomas E. Wooley, La Crosse, for \$37,057.55; the contract calls for the completion of the work by July 1.

SEWERAGE

Birmingham, Ala.—The Street Committee has recommended that the City Engineer be instructed to draw an ordinance for storm sewer in drainage area that empties through St. Charles, Central avenue and Eleventh street at Avenue H.

Mobile, Ala.—Chief Engineer Wright Smith has estimated cost of draining Davis avenue at \$8,600; Spring Hill avenue, \$39,830, and Broad street, \$35,000.

Globe, Ariz.—Citizens have defeated proposition to issue bonds for constructing a system of sewers.—Jos. H. Welce, City Clerk.

Clarendon, Ark.—As soon as the Board of Assessors finish work of assessing property bids will be asked by the city for the installation of a sewerage and water works system; cost, between \$80,000 and \$100,000.

Pasadena, Cal.—Council is considering construction of sewers in Kirkwood, Morton, Fair Oaks, Kenyon and Montana streets, Sunset avenue and Los Robles street.

Whittier, Cal.—Sewer bonds, \$110,000, have been sold for construction of sewer

system and for sewer farm; bids not yet called for construction.—A. W. Tryce, City Engineer.

San Bernardino, Cal.—Council has decided to construct a sewer along B. Eleventh, Base Line and A streets.—M. P. Conners, Superintendent of Streets.

San Francisco, Cal.—Plans and specifications have been completed for sewer in the Yerba Buena District; plans are being prepared for eight other sewers.

Manchester, Conn.—Engineer George A. Johnson has completed surveys for the extension of the sewer system of the South Manchester Sanitary and Sewer District; work will be started at once; improvements run through Summit, Flower, Bigelow and Russell streets and Wadsworth avenue.

Torrington, Conn.—Bids will be received May 18, 8 p. m., for \$150,000 bonds to extend sewer system and to retire certificates of indebtedness.

Dover, Del.—The Board of Trade will be asked to recommend to the new Street and Water Commission that the newly constructed sewer be extended from its present mouth across the Holmes, Wharton, Richardson and Martin properties to the river; it is estimated that this work will cost \$7,500 or \$8,000.

Perry, Fla.—Bids will be received May 20, noon, for \$15,000 sewer bonds.—J. C. Calhoun, Clerk Board of Trustees.

Quincy, Fla.—Citizens have voted \$25,000 sewerage bonds.

Bonnars Ferry, Ida.—Village Trustees are considering the construction of a sewer system.

Galesburg, Ill.—Mayor Sanderson has indefinitely postponed receiving bids for the Pine street sewer.

Fort Wayne, Ind.—Council has ordered plans for sewers in Lillie street and in two alleys.

Indianapolis, Ind.—Plans for a sewer to cost approximately \$37,000 have been prepared by Charles A. Brown, Assistant City Engineer in charge of sewers, and will be presented to the Board of Public Works for approval within a few days; main sewer will be in Raymond street, from Shelby street to State avenue, with branches in Kelly and Tabor streets; sewer will be 8,955 feet long and will range from a 10-inch pipe to a concrete or brick sewer 4 feet 3 inches in diameter.

Laporte, Ind.—Council is considering a new sewer outlet for Laporte.

South Bend, Ind.—Bids will be received by the Board of Public Works very soon for constructing the Meade street trunk sewer; length, two miles.—A. J. Hammond, City Engineer.

Parsons, Kan.—Council has passed ordinances for the construction of an 8-inch lateral sewer in Lincoln avenue and an alley in block 4; also for taking up, repairing and relaying present sewer in and through block 161.—T. B. J. Wheat, City Clerk.

Walden, Mass.—Council has authorized a \$20,000 loan for sewers and a \$20,000 loan for surface drainage.

Crookston, Minn.—City is considering repairs to main sewer outlet; cost, \$3,000.—J. E. Carroll, City Engineer.

Virginia, Minn.—State Senate has passed a bill providing for the construction of sewers.

Grenada, Miss.—Citizens have voted \$100,000 bonds for further extension of sewerage lines.

Helena, Mont.—The Supreme Court has handed down an oral opinion which, in effect, enjoins the issue of \$70,000 sewer bonds.

Hastings, Neb.—Council has created a new sewer district on the south side to include property between Denver and Hastings avenues, C and D streets.

Omaha, Neb.—The City Engineer has been instructed to advertise for bids for the construction of three sewers and to proceed with the construction of a fourth by Council Committee of the Whole; one sewer the Engineer will build out of city funds will be a relief sewer on Thirteenth street between Lincoln avenue and William street; other sewers will be on Frederick street between Tenth and Twelfth streets; Thirteenth street, between D and Atlas streets, and on Atlas street, between Thirteenth street and Riverview Park; and on Twenty-seventh street and Twenty-ninth avenue, from Fort street northerly toward Miller Park; last named sewer will cost \$56,000.

East Orange, N. J.—City Engineer Reimer has estimated the cost of the proposed drain which is to run through Whittlesey avenue and connect with a new drain built by Newark, at \$16,000.

Haddonfield, N. J.—Council is considering construction of sewers in Haddon, Linden and Trueman avenues.

Linden, N. J.—Citizens have voted to issue \$35,000 bonds for a sewer system.—J. L. Bauer, Elizabeth, Engineer.

Oneida, N. Y.—City is considering the construction of a 10-inch tile sewer.—C. S. Tibbitts, City Engineer.

Plainfield, N. J.—The Special Committee on Sewerage and Sewage Disposal, R. I. Tolles, President, has suggested for the consideration of Council the advisability of having the city alone construct a trunk line and disposal works and the making of proper contracts with other communities for the disposal of their sewage.

Trenton, N. J.—Council is considering the changing of sewer plans at Hamilton terrace and the construction of a sewer on Ashmore avenue.

Oswego, N. Y.—The State Board of Health has approved plans for the construction of sewers on both sides of Oswego River.—Chas. H. Snyder, City Engineer.

Syracuse, N. Y.—Proposals will be canvassed by the Board of Contract and Supply for three contracts as follows: 15-inch sewers in Elm and Robinson streets, \$4,500; 12-inch sewer in Eldorado street, cost \$1,000, and grading Erie street, cost \$1,000.

Syracuse, N. Y.—The Board of Estimate and Control has recommended, and Council authorized, the increase of the bond issue for the sewage disposal plant from \$48,500 to \$52,000.

Waterloo, N. Y.—State Senate has passed the bill providing for the establishment of a sewer system and sewage disposal plant.

Marshall, N. C.—Dudley Chipley, Engineer, Board of Internal Improvements, will prepare plans for the installation of a sewerage system.

Grand Forks, N. D.—City has approved plans for sewer in Riverside Park; bids are being taken for the construction of sewers in various streets.

Ashtabula, O.—The Board of Public Service has recommended that Council order plans prepared for a sanitary sewer on North Main street.—A. J. Richardson, Clerk.

Bucyrus, O.—City Engineer F. L. Neiderhiser will soon start out to extend some levels already run, in an effort to determine whether the city can build a sewage disposal system without the necessity of putting in a pumping station to elevate the sewage into the septic tanks; if a pumping station is found unnecessary, a considerable expense will be avoided, not only in initial outlay but in the upkeep of the plant.

Columbus, O.—Council has decided to issue \$7,000 bonds for sewerage Warren avenue, \$3,000 for Ogden avenue and \$3,000 for West Town street.

Columbus, O.—Estimates on the construction of a continuation of the Markison avenue sewer from the old canal to the river, approximately 1,400 feet, have been submitted to the Board of Service by the City engineer; cost will be about \$9,000; it is proposed to build the outlet of concrete with a pressure lid to prevent the canal filling with water when the river is high.

East Liverpool, O.—The question of providing ample sewerage facilities for the fast growing East End, or sewer district No. 3, a most important and immediate necessity, is engrossing the attention of the Board of Health; resolution has been passed asking Council to look after the sewerage of district No. 3 and also to complete the work left undone and under way in district No. 2.

Ironton, O.—Council has passed under suspension of the rules an ordinance for the issuing of bonds for the construction of a storm water sewer from Beechwood Park to the river or over the Pine street route; cost, about \$35,000.

Painesville, O.—City is considering the construction of 540 feet of 8-inch sanitary sewer.—H. P. Cummings, City Engineer.

Sebring, O.—Preliminary report has been prepared by John H. Holl, Canton, on sanitary sewers and a disposal plant; estimated cost, \$22,045.

St. Clair, O.—Citizens have voted \$90,000 bonds for the establishment of a complete sewer system.

Van Wert, O.—City Engineer J. C. Ballard has completed plans for a sewer in North Washington street.

Warren, O.—By a recent decision of the State Board of Health city is ordered to install an entirely new sewer system at a cost of several hundred thousand dollars; law will be tested in the courts before the city will comply with the law.

Lawton, Okla.—Citizens have voted \$125,000 for sewer and water works extension.

Bradford, Pa.—The Joint Street Committee has recommended that the City Engineer make plans and secure an estimate of the cost of a sewer on Mechanic street.

Dunmore, Pa.—Council has instructed City Engineer to prepare plans for the building of a sewer on Pine street, between Blakely and Willow streets, and on Willow, between Pine and Chestnut streets; Council is also considering construction of two other sewers.

Erie, Pa.—The South Erie Improvement

Association is unanimously in favor of the legislation pending in Councils to have the Mill Creek intercepting sewers, ordered by the State Department of Health, built and put into use as soon as possible.

Harrisburg, Pa.—The Street Committee has recommended the construction of sewers in Division, Mohantonga and Jefferson streets.

Norristown, Pa.—City is considering construction of twelve pipe sewers.—S. C. Corson, City Engineer.

Northumberland, Pa.—Borough has been given permission by State Board of Health to construct a number of sewers pending the completion of a sewage disposal plant; Milton, Lewisburg and other towns have been granted similar permissions.

New Castle, Pa.—According to a recommendation made by the Street Committee of Councils the proposed storm sewer in the Garfield-Sheridan avenue district in the Second Ward will be built.

South Bethlehem, Pa.—Council is considering construction of sewers in Seventh, Bishopthorne and Chestnut streets.

South Bethlehem, Pa.—Borough Engineer Neumeier has estimated cost of extending sewer at gas plant on Lehigh street at \$1,200.

Swissvale, Pa.—Borough will vote May 15 on the issuing of \$100,000 bonds for a new sewer system and for grading and paving streets.

Upland, Pa.—A corps of surveyors in the employ of Engineer A. F. Damon, of Darby, is taking the elevations and grades of the streets for the purpose of securing the necessary data for the plans of the proposed sewage disposal plant.

Warren, Pa.—The Sewer Committee has recommended that the city adopt the type of sewage disposal plant used by the city of Reading, and that the committee be instructed to get options on land necessary for the plant; also that property surveys be made for a trunk line sewer.—John Schults and T. O. Hazen, Committee.

Providence, R. I.—The Committee on Sewers has recommended construction of sewers on South, Dewey and Baxter streets and Ohio avenue.

Providence, R. I.—The Committee on Finance has recommended a \$100,000 addition to the appropriation for construction of sewers.

Manning, S. C.—All bids have been rejected for the proposed sewers; date for receiving new bids not yet selected.—R. C. Wells, City Clerk.

Newberry, S. C.—Citizens will vote May 18 on \$40,000 bonds for the improvement and extension of sewerage and water works systems.

Mitchell, S. D.—Citizens have voted bonds for constructing sewers.—L. L. Ness, City Auditor.

Nashville, Tenn.—Senate has passed House bill authorizing Hamilton County Court to issue bonds for sewers.

Houston, Tex.—City will spend \$1,000,000 this year on sewerage, paved streets, wharves and slips.—H. B. Rice, Mayor.

Yoakum, Tex.—Commercial Club is considering the construction of a sewerage system by private funds.

Bellingham, Wash.—Plans are being prepared by City Engineer Troutman for a main trunk sewer, with three laterals, in Meridian street and vicinity.

Friday Harbor, Wash.—City has decided to construct a trunk line sewer; cost, \$5,000.

Medical Lake, Wash.—City will install a model sewer system and pave several streets.

Seattle, Wash.—Under the estimate of City Engineer R. H. Thomson on the cost of the proposed Connecticut street trunk sewer, the general fund will be required to pay \$50,000 of the entire \$105,000, which the improvement will cost.

Tacoma, Wash.—Plans are being prepared for three storm water sewers of cement pipe and a concrete conduit; total cost, \$75,000.—F. L. Davis, City Engineer.

Beloit, Wis.—City will advertise for bids at once for constructing 15,000 feet of vitrified pipe sewers.—Robert Caldwell, City Engineer.

Aylmer, Ont., Can.—Representatives of Ottawa, Hull and Aylmer are discussing the installation of septic tanks in this city; cost, about \$5,000.

Hamilton, Ont., Can.—Tenders will be received May 27 for the following debentures: \$65,000 for sewers; \$112,000 for water works; \$125,000 permanent roadways, and \$25,000 public library debentures.—S. H. Kent, City Clerk.

Niagara Falls, Ont., Can.—Ratepayers will vote May 27 to issue \$1,800 debentures for sewer construction.

North Battleford, Sask., Can.—Willis Chipman, Civil Engineer, 103 Bay street, Toronto, Ont., has been selected by town to prepare plans for sewerage system.

Winnipeg, Man., Can.—Bids will be received for 3,000 feet of 18-inch and 1,000 feet of 15-inch sewer pipe.

BIDS RECEIVED AND CONTRACTS AWARDED

San Francisco, Cal.—A contract has been awarded to the Healy-Tibbitts Construction Company for a 6-foot circular reinforced concrete sewer in Lombard street from Octavia to Laguna street, and in Laguna street from Lombard street to the bay, at a cost of \$39,185.25.

Peoria, Ill.—Contract for the paving of South Douglas street from Main street to Moss avenue has been awarded the firm of J. S. Allen & Co. on their bid in the sum of \$3,968.05, which was the lowest of three bids; the contract for the paving of the alley from Bridge to Harrison street between South Adams and Washington streets was awarded John McAllister on his bid in the sum of \$1,126.24.

Franklin, Ky.—The contract for constructing 5½ miles of pipe sewers, bids opened April 21, has been awarded by the city to Newman Sewer Construction Company, of Evansville, Ind., at \$4,791.

Havre de Grace, Md.—The Town Council has contracted with the Maryland Dredging Company to dig a channel 9 feet deep from the main channel in the river toward the mouth of the city sewer, so the refuse will be carried away by the tides.

North Andover, Mass.—Contract for 2 miles of pipe sewers, bids opened April 15, has been awarded to Charles G. Craib, of 249 Pleasant street, Winthrop, for \$16,056.—Ernest W. Bowditch, 62 Devonshire street, Boston, Engineer.

Bemidji, Minn.—M. D. Lovel, Minneapolis, has been awarded a contract for laying 100 linear feet 12-inch pipe, 6 feet deep, for \$2.35; 4,700 linear feet 10-inch pipe, 9 feet deep, \$1.72; 4,580 linear feet 8-inch pipe, \$1.30; 7,870 linear feet 6-inch pipe, \$1; 2,610 linear feet 4-inch pipe, 70 cents; also four 10-inch gate valves, \$30; five 8-inch, \$20; thirteen 6-inch, \$14; seventeen 4-inch, \$10; forty-three hydrants, 4- and 6-inch, for \$30 and \$40, respectively. Total, \$27,096.—M. D. Stoner, City Engineer.

Billings, Mont.—The lowest bid opened April 23 for constructing sewers in Sewer Districts 31 and 32 was submitted by A. T. Edwards, for \$10,911.

Fort Lee, N. J.—Ernest Abraham, of Hackensack, has secured contract for the second section of the sewer system for \$6,826, bids opened April 28.

Auburn, N. Y.—Mayor Koenig has received a telegram from Hooker & Son, of Rochester, the successful bidders on work for the new sewer system, stating that the firm accepts the work, with a proviso that it is not required to employ inferior help, to the detriment of the work or to themselves; when the contract was awarded to Hooker & Son, Alderman Guilfoill introduced an amendment, which was passed, to the effect that Hooker & Son should be given the contract provided they employed, so far as possible, Auburn citizens as laborers.

Utica, N. Y.—The Board of Contract and Supply has awarded the contract for constructing a sewer in Cottage street to A. M. Johnston for \$432.10; the only other bidder was Rocco Perretta, whose figures were \$573.10.

Canton, O.—Bids for six small sanitary sewers were opened by the Service Board and referred to the City Engineer for tabulation; the sewers are located on East North street, Belden avenue, Erie street, Grover avenue, East Fourth street and in the alley south of Hane street and west of Thompson alley; the bidders were Contractors Skeeles, Moore, Sommers, Christiansen, L. D. Burd and the Cement Specialty Company.

Youngstown, O.—Contract for Willow, McHenry and Albert street district sewer has been awarded, as follows: P. Dioric, \$2,878.50; East Federal street sewer, Patrick Grady, \$1,247.02.

Bradford, Pa.—M. Applegate & Son, Alliance, O., have been awarded contract for Webster street sewer.

Nashville, Tenn.—Bids for building a 30-inch circular sewer across Ewing avenue through private property and in alley No. 194 were opened by the Board of Public Works May 4 as follows: Sullivan & Haggerty, \$511.51; W. Barnsfield, \$563; J. W. Quinn, \$464.74; Dan Ellis, \$494.25; E. T. Lewis, \$447.55; John Broderick, \$467.06; Capital City Construction Company, \$400.

The Cumberland Foundry and Manufacturing Company was awarded the contract for furnishing and installing plates for box culverts in Ninth street and Sylvan avenue, and in Oak street, near Seventh avenue, at \$1.44 per 100 pounds. Other bids received were as follows: Stewart & Bruckner, \$1.45 per 100 pounds; Robert Jackson Foundry Company, \$1.47; Nashville Foundry Company, \$1.59.

Dallas, Tex.—Bids for constructing three manholes in the paving on Annex avenue brought only one offer, that of the Dallas Home Improvement Company, per Emil Wunderlich, for \$108 for the three.

The Dallas Lime & Gravel Company was given the contract for laying a sanitary sewer on Argyle street, the citizens to pay the cost and the city to take it over at cost when there shall be a 6 per cent earning. The cost will be \$345. The Dallas Home Improvement Company bid \$418.

Seattle, Wash.—Dickens & Rightmire, 1724 Twenty-fourth avenue, were awarded the contract for sewers on Pine street, et al., for \$5,195.40.

Burlington, Wis.—N. F. Reichert has been awarded a contract for laying 1,239 linear feet 15-inch pipe sewer for \$1 per linear foot; 824 linear feet 10-inch pipe, 80 cents; 944 feet 12-inch pipe, 80 cents; three manholes, \$30; fifteen catch basins, \$22; also for storm sewer 589 linear feet 12-inch pipe, \$1.25; 523 feet 8-inch pipe, 90 cents; one manhole, \$35; one lamp hole, \$10; total, \$4,325.40. Other bids were: William Davidson, \$4,453.30; Mulholland & Son, \$4,982.25; Peter G. Pederson, \$5,219.25; T. H. Iglehart, \$5,962.80.—P. J. Hurtgen, City Engineer.

Jefferson, Wis.—Contract for sewer extensions, bids opened April 30, has been awarded to James McCabe, of Fond du Lac, for \$7,454.—E. B. Parsons, of Watertown, Engineer.

La Crosse, Wis.—Contract has been awarded by the city to C. W. Noble, of La Crosse, at \$17,200 for the construction of Section C, 2,520 feet of 30-inch and 300 feet of 52x78-inch pipe sewers.

WATER SUPPLY

Birmingham, Ala.—Water Committee has recommended surveys to secure cheaper water for city; Geo. W. Fuller, of New York, N. Y., with City Engineer Maury Nicholson and Consulting Engineer Kendrick, of Birmingham, will prepare the plans.

Mobile, Ala.—The Board of Public Works desires a small asphalt mixing repair plant of a capacity of 250 yards per day.—Wright Smith, Chief Engineer.

Tuscaloosa, Ala.—Bids were received on the construction of a large concrete flume at the end of Twenty-first avenue, just west of the new Y. M. C. A. building. There were two bidders, Finner Bros. and the Tuscaloosa Concrete Company, both of this place. The contract was awarded to the latter at the price of \$592.

Globe, Ariz.—Citizens have voted to issue bonds for a system of water works; plans and specifications have been prepared.—Jos. H. Welce, City Clerk.

Clarendon, Ark.—Council has practically completed all arrangements for installing a water works and sewerage system at this place; Board of Assessors have begun their work of assessing the property, and as soon as it is completed the city will be prepared to receive bids for the construction of the works; there will be one and probably two artesian wells bored to obtain water; system will be completed and will cost between \$80,000 and \$100,000.

Colusa, Cal.—City is considering question of acquiring municipal water works and constructing sewers.

Hanford, Cal.—The Valley Water Company has been incorporated by Alex. Guthrie, Jas. Shaw Robertson and Edw. Kauntze.

Los Angeles, Cal.—City has advertised for 2,000 tons of cast-iron pipe.

Pasadena, Cal.—The East Side Improvement Association is urging the installation of several 2-inch hydrants in Brent, Oak and Huntington drive.

San Francisco, Cal.—Bids will be received by the Board of City Supervisors May 17 for the purchase of \$240,000 Hetchy-Hetchy water bonds.

San Francisco, Cal.—Plans and specifications are completed for 2,775 gate valves; preliminary design of the mechanical equipment of the salt water pumping station to be constructed in the Rincon Hill district is completed; plans have also been completed for 90 fire cisterns.

Norwalk, Conn.—City will construct water works; cost, \$70,000.—Chas. N. Wood, City Engineer.

Waterbury, Conn.—City is considering construction of a reservoir; cost, \$1,000,000.—R. A. Cairns, City Engineer.

Washington, D. C.—Upon the recommendation of Engineer Commissioner William V. Judson, the District Commissioners have issued the following orders: That the following water mains be laid and service sewer be constructed: 280 feet of 8-inch water main in Twenty-eighth street, N. W.; 165 feet 3-inch water main in alley of square No. 551 Q street and Florida avenue, N. W.; 60 feet 8-inch water main in W street, S. E.

Milton, Fla.—The Solomon-Norcross Company, of Atlanta, Ga., is preparing plans for a water works.—W. J. Williams, Jr., City Clerk.

Quincy, Fla.—Citizens have voted \$35,000 bonds for improving water works and electric light plant.

Marietta, Ga.—City will expend \$80,000 for the construction of water works and \$30,000 for sewers; Engineer has not yet been selected.—E. P. Dobbs, Mayor.

Jacksonville, Ill.—The Jacksonville Water Works Company is considering an \$8,000 expenditure in improvements.—A. T. Maltby, Consulting Engineer.

Edwardsville, Ind.—City has received a petition to lay mains on Slatt street.—H. P. Hotz, Mayor.

Waterloo, Ia.—Citizens will vote on May 24 on municipal ownership of the water works system.

Halstead, Kan.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have estimated cost of proposed water works construction at \$35,000.—W. H. Lentz, Mayor.

McCune, Kan.—City is considering installation of a water works system.

Winfield, Kan.—Citizens have voted \$65,000 bonds to purchase the Winfield Water Company's plant.

New Bedford, Mass.—W. E. Smith of the Water Board has been instructed to act with Superintendent in procuring from the City Engineer such surveys together with plans and profiles as may be required by the Board for the installation of the second supply main from High Hill reservoir to the city distributing system; petitions were received by the Board for numerous extensions of mains.

Laurium, Mich.—Council is considering the installation of meters.

Port Huron, Mich.—The Water Board has recommended the securing of a Holly pumping engine of 12,000,000-gallon capacity.

Saginaw, Mich.—City Engineer Roberts will prepare plans and specifications for a 6-inch water main in Mary street; also for installing a main on First avenue.

Albert Lea, Minn.—Bids will be received May 13, 5 p. m., for 315 linear feet 8-inch, 436 linear feet 6-inch, 3,049 linear feet 4-inch cast-iron water mains; 15 6-inch and 5 4-inch gate valves.—Wm. Barneck, City Engineer.

New Market, Minn.—City is considering construction of water works; cost, \$4,000.

Red Wing, Minn.—Citizens have voted to issue \$35,000 for improving the water supply system.

St. Cloud, Minn.—City will soon install meters.—John Benson, President Water Board.

Grenada, Miss.—Citizens have voted \$5,000 bonds for improvements to water and light plant.

Meridian, Miss.—City has awarded the \$250,000 water works bond issue to the Union Bank and Trust Company, city, for \$253,375.

Helena, Mont.—The Supreme Court has handed down an oral opinion which, in effect, enjoins the issue of \$600,000 water works and \$70,000 sewer bonds.

Florence, Neb.—Council is considering petitions for placing fire hydrants at Bluff and Washington and Jefferson and Clay streets.

Omaha, Neb.—Citizens have voted \$6,500,000 water works bonds.

Franklin, N. H.—The Water Commissioners have asked Council for a \$10,000 loan to be used to construct a wall 40 feet in diameter, to be used for storage in connection with the natural filtration plant near the Pennegwasset River.

Hoboken, N. J.—Governor Fort has signed the bill authorizing city to issue \$35,000 bonds to relay, enlarge and extend water mains.

Keasbey, N. J.—The Keasbey Water Company has been incorporated to operate water works; capital, \$50,000.—W. A. Belcher, E. L. Gridley, Perth Amboy, and M. J. Force, Menlo Park, Incorporators.

New Brunswick, N. J.—The Board of Water Commissioners has asked for \$10,000 for new 12-inch and 8-inch mains.

Paterson, N. J.—Citizens of the Stony road section have petitioned the Board of Works for the installation of a number of fire hydrants.

Princeton, N. J.—The Municipal Ownership Committee, to which the water petition was referred, has requested authority to secure an expert to appraise the property of the Princeton Water Company; Committee is composed of Mayor Robinson, A. H. Phillips, E. J. Shinn and D. Struve.

Wildwood, N. J.—The Wildwood Water Company has petitioned the Board of Freeholders of Cape May County for permission to lay mains along the County roads from the Rose Mill Pond, between Green Creek and Rio Grande, to Holly Beach City.

Ashford, N. Y.—Town has granted Geo. N. Cowan, Delevan, N. Y., a permit to organize a water works corporation to supply West Valley with water.—G. N. Cowan, Engineer.

Brooklyn, N. Y.—City may readvertise the contract for building an addition to the pumping station at Atlantic avenue and Logan street, because of the delay

in completing it by present contractors.—Deputy Commissioner Cozier.

Buffalo, N. Y.—The Board of Aldermen on April 26 passed an ordinance rescinding its previous action asking City Clerk to procure bids for two 20,000,000-gallon pumps and will receive bids for two 30,000,000-gallon pumps.

Central Bridge, N. Y.—The Central Bridge Water Company has decided to construct a new reservoir.

New York, N. Y.—City will soon ask for bids on about 1,000 tons of cast-iron pipe.—J. H. O'Brien, Commissioner of Water Supply, Gas and Electricity.

Ossining, N. Y.—City has sold \$50,000 water bonds.

Roslyn, N. Y.—City has decided to install a municipal water works system.

Syracuse, N. Y.—The Water Board has been instructed to lay water mains in the new sewer district where mains do not exist, especially in Genesee street.

Tarrytown, N. Y.—Citizens will vote May 11 on \$75,000 bonds for water main improvements.

Monroe, N. C.—Citizens will vote May 29 on \$18,000 bonds for building of water works.—H. B. Adams, Secretary Board of Aldermen.

Grand Forks, N. D.—The local Executive Committee of Wesley College is considering question of extending the water mains and sewer laterals along the north and south streets of University place.

Cincinnati, O.—Bids will be received June 1 for \$150,000 bonds, issued for the purpose of improving and extending the existing water works.—Ernest Von Bargen, City Auditor.

Clarington, O.—Town has received an application from the Clarington Water and Electric Light Company for franchise to install a water system.—F. V. Iams and E. H. Yost, Attorneys.

Dayton, O.—Construction Superintendent Heffernan of the water works has reported an estimate of \$561.16 for laying mains on Pine, from Fifth street to the hydraulic race, and an estimate of \$382.91 for mains on Webb, from First to Second streets.

Defiance, O.—Negotiations are now pending with the Defiance Water Company for new franchises and contracts.

Eaton, O.—The Board of Public Affairs has asked for \$1,800 cash and a bond issue of \$7,000 for improving the water works system.

Krebs, Okla.—Council has called an election May 15 on \$50,000 bonds for installation of a municipal water works system.

Norwalk, O.—City Engineer Laylin has been instructed to furnish an estimate for a 6-inch water main on Monahan avenue.

Piqua, O.—Council is considering the laying of water mains in Camp, Boone, North, Greene and Downing streets, Park and Rundle avenues.

Salem, O.—Council has passed an ordinance calling for another special election to be held on May 29 to allow the citizens to decide whether or not they shall issue \$138,000 worth of bonds for the purchase of the water plant from the Salem Water Company.

Arnett, Okla.—Citizens will vote on \$5,000 bonds for improvement of water works system.

Carmen, Okla.—Citizens have voted \$30,000 bonds for the construction of a water works system.

Cherokee, Okla.—City has sold the \$35,000 water works bonds, recently voted, to John Nureen, Chicago.

Lawton, Okla.—Citizens have voted \$125,000 for water works and sewer extension.

Westville, Okla.—Engineers have made the survey for the water works line from Bluff Springs to Westville, a distance of less than two miles.

Bethlehem, Pa.—Bids will be received May 28, 7 p. m., for \$175,000 semi-annual water bonds.—Wm. J. Heller, Chairman Finance Committee.

Bradford, Pa.—City is considering construction of a storage reservoir of 200,000,000 gallons capacity.—A. F. Bannon, Jr., City Engineer.

Eddystone, Pa.—An ordinance has been introduced in Council allowing the Ridley Water Company the right to run supply mains through the borough in opposition to the Springfield Water Company.

Harrisburg, Pa.—The Water and Light Committee is considering ordinances providing for the placing of water mains in Regina, Whitehall, Dauphin and Seventeenth streets.

Harrisburg, Pa.—The ordinance authorizing the Water Commissioners to purchase for \$10,300 the H. A. C. grounds for the extension of the water works has been referred back to Councils with an affirmative recommendation by the Finance Committee.

Pittsburg, Pa.—Mayor Wm. A. Magee will recall from Councils the ordinance for a Councilmanic bond issue of \$713,000 for building a pumping station at Aspinwall, to pump filtered water for the North Side; it has been found that preliminary filtration

of 14 additional filter beds will be needed to supply the entire city with filtered water and to provide for future growth of the municipality; additional beds will cost about \$1,000,000 and more land will have to be purchased as a site for the beds; it is proposed that the people vote on bond issues for the pumping station and the extra filter beds, the bond election to be held between now and the fall election; at the same time the proposed bond issues for removing the hump and for other projects may be voted on.

Pittsburg, Pa.—Bids will be received May 14 by Comptroller Morrow for \$660,000 bonds for water improvement and preliminary work in connection with the construction of the new \$1,000,000 bridge at the point.

Reading, Pa.—The Superintendent has submitted plans for a covering for the Penn street reservoirs, which improvement will be made during the coming year.

Scottdale, Pa.—James B. Hogg, Borough Engineer, is preparing plans for a dam across Barren Run several miles from here, which will be 20 feet high at the breast and which will have a total storage capacity of 15,000,000 gallons; it will supply water for this place and for Smithton, Jacobs Creek and West Newton, and will be built by a private enterprise, of which John Anderson, city, is the head; bids will be asked for by the engineer as soon as the plans and specifications are completed.

Newberry, S. C.—Citizens will vote May 18 on \$40,000 bonds for the improvement and extension of water works and sewerage systems.

Chattanooga, Tenn.—Water Works Commission will soon ask for bids for the erection of a plant.

Johnson City, Tenn.—Preliminary investigations are now under way locating source of new water supply; bids will not be called for until after August 1; cost, about \$250,000.—W. M. Dunlap, City Engineer.

Obion, Tenn.—City will issue \$55,000 bonds for installing a water works system and other improvements.

Atlanta, Tex.—City will soon receive propositions from engineers for a system of water works.—Hugh Carney, City Secretary.

Crockett, Tex.—The Attorney General has approved the \$25,000 water works bond issue.

Dallas, Tex.—The Board of Municipal Commissioners has ordered a 4-inch main constructed in South boulevard east from Harwood street.

Salt Lake City, Utah.—Council has voted to lay about 25 additional blocks of water mains; cost, \$37,081.

Barre, Vt.—City has voted to bond for the erection of a new storage reservoir; capacity, 42,000,000 gallons.—Geo. A. Reed, City Engineer.

Honaker, Va.—Council has drafted franchises for water and electric light companies which will soon be offered.

Pulaski, Va.—Plans and specifications will be ready very soon for about 700 cubic yards of reinforced concrete and 15,000 feet of 12-inch cast-iron pipe with special castings and valves.—G. H. Derrick, City Engineer.

Richmond, Va.—The Council Committee on Finance has recommended the immediate issue of \$1,500,000 bonds for construction of water mains both in the city and in the annexed territory, both for house service and added fire protection, completion of sewerage system and for other improvements.

Prescott, Wash.—Council is considering the erection of a standpipe; bids will be taken for a steel and wooden structure, including the making of the foundation.

Renton, Wash.—The Fire and Water Committee of Council has plans under way for the improvement of the water system at a cost of several thousand dollars.

Seattle, Wash.—City Engineer R. H. Thomson has estimated cost of installing water mains on Twentieth avenue N. W. at \$10,400; on Earl street, \$12,200; Fourteenth street N. W., \$10,100, and Fifth avenue N. E., \$2,880.

Parkersburg, W. Va.—Bids will be received June 1, 3 p. m., for \$270,000 bonds, proceeds of which will be applied to the construction of a water works system.—H. H. Moss, Jr., S. D. Camden, W. M. Hall and B. S. Pope, Commissioners.

Parkersburg, W. Va.—Chapin & Knowles, of Pittsburg, Pa., have been selected as engineers for the proposed water works; \$270,000 bonds are available.

Eau Claire, Wis.—Citizens have petitioned for water main extensions on several streets; 100 tons of 6-inch pipe, 16 hydrants and 12 valve boxes will be purchased, cost not to exceed \$3,800; W. H. Willard, Manager of the water works, has recommended the construction of a concrete reservoir with a capacity of 1,500,000 gallons and the

installation of 44 6-inch Cook wells, to yield 2,500,000 gallons daily.

Wauertown, Wis.—City is considering construction of approximately 9,500 feet cast-iron pipe mains.—Arnold Kraeft, City Engineer.

Carman, Man., Can.—Citizens will vote May 21 on \$25,000 bonds to complete the water works system.

McLeod, Alta., Can.—City has decided to spend \$100,000 this summer for the water works and sewerage systems.

Prince Rupert, B. C., Can.—Plans are being prepared by E. A. Wilmut, Dyking Engineer for the Provincial Government, Victoria, B. C., for a water works system.

BIDS RECEIVED AND CONTRACTS AWARDED

Oakland, Cal.—Bids were received April 29 by the Board of Public Works for the installation of the pipe system for the auxiliary high pressure salt water plant in course of construction at the Willows on Lake Merritt, and were referred to the City Engineer and the City Attorney.

For the 14-inch mains, it being estimated that 3,780 feet of this pipe will be required, the bids were as follows: Contra Costa Construction Company, \$14,364; Williams & Belser, \$13,230; Piedmont Paving Company, \$14,779.80; C. D. Vincent, \$13,872; Cotton Brothers, \$14,757; William Heafey, \$11,982.60.

For 10-inch mains, it being estimated that 14,150 feet will be required: Contra Costa Construction Company, \$9,960; Williams & Belser, \$11,205; Piedmont Paving Company, \$12,284; C. D. Vincent, \$10,375; Cotton Brothers, \$10,655.50; William Heafey, \$9,296.

Besides these main pipes, the bids include prices for incidentals such as elbows, blow-outs and other necessary pipe fittings, which will bring the total to many more thousands of dollars. But the figures have not been totaled as yet by the Board of Public Works. According to the bids on the 14 and 10-inch mains, William Heafey is the lowest bidder.

Lamar, Col.—Council has let the contract for laying water mains in district No. 4 for the new water system, now in progress of building, to Doyle & Schwartz, of Colorado Springs, at \$58,000; contract in this district requires the laying of over 16 miles of water mains and the installing of at least 60 hydrants.

Jacksonville, Fla.—Bids were received for making the excavation for the water pipe to be laid on Franklin street, one from Sherman Spencer at 7½ cents per linear foot, and the other from J. T. Daily at 11 cents; the contract was awarded to Mr. Spencer.

Atlanta, Ga.—The Water Department has awarded contract to the Builders' Iron Foundry, Providence, R. I., for one 30-inch Venturi meter having a capacity of 25,000,000 gallons per day for measuring the discharge from their new vertical triple expansion pumping engine which is now being installed.

Ottawa, Ill.—The contract for the Adams street water extension was awarded to J. J. Dougherty for \$889.

Waukegan, Ill.—Council, April 29, awarded contract to the Fred M. Prescott Pump Company, Milwaukee, Wis., for a 6,000,000-gallon pump for \$18,890.

Hancock, Mich.—The Board of Public Works, April 28, awarded contracts for water pipe to the U. S. Cast Iron Pipe and Foundry Company, Chicago, Ill., for \$16,409, and for valves to the Marshall-Wells Hardware Company, of Duluth, Minn., for \$2,809.

Owosso, Mich.—Contract for a complete pneumatic pumping plant, bids opened February 24, has been awarded to Harris Air Pump Company, of Indianapolis, Ind., and Laidlaw-Dunn-Gordon Company, of Cincinnati, O.; total cost, \$8,211.—A. H. Dumond, City Clerk.

Bemidji, Minn.—Council has awarded contract for erection of a steel tower and tank for the water system to the Des Moines Bridge and Iron Company, of Des Moines, Ia., for \$6,328.

Brookville, Miss.—Walter V. O'Rourke, 614 Macheca Bldg., New Orleans, La., has secured contract for constructing water works.

St. Louis, Mo.—The McCully Construction Company, city, has secured the contract for constructing pumping station at City Insane Asylum for \$35,650. The following are reported as the lowest bids received April 20 by the Board of Public Improvements for other work at Asylum: Boilers, John O'Brien Boiler Works, St. Louis, \$12,146; pumping station, Laidlaw-Dunn-Gordon Company, St. Louis, \$7,635, and tank, the Mississippi Valley Construction Company, \$14,885.

East Orange, N. J.—All bids opened April 12 for 13,000 feet of 6 to 1½-inch water pipe have been rejected, and new bids will be received until May 24 for Byers'

guaranteed wrought-iron pipe or its equal.

Contract for furnishing air compressor at White Oak Ridge Pumping Station, bids opened April 12, has been awarded to Laidlaw-Dunn-Gordon Company, 115 Broadway, New York City.—L. E. Rowley, City Clerk.

Jersey City, N. J.—W. J. Murphy has been awarded the contract for supplying lead to the Street and Water Department; the bid was 99½ per cent of the standard price; James P. Meehan bid 115 per cent; the W. W. Farrier Company bid 100 per cent.

Lockport, N. Y.—The Mayor and City Clerk have been directed to enter into a contract with the National Water Main Cleaning Company for cleaning the pipes in Lockport on Mill, Locust and Market streets; it will cause a bill of expense of about \$1,000.

New York, N. Y.—Bids were received as follows on April 19 by John J. O'Brien, Commissioner Water Supply, Gas and Electricity, for furnishing, delivering and laying water mains in Anderson, Bainbridge, Creston, Eastburn, Tremont and Summit avenues, in 170th 174th and 204th streets, in Kingsbridge road, Moshulu parkway and Parkside place, Borough of the Bronx: Louis D. Gregory, 342 East 125th street, \$51,856; Goodman Contracting Company, \$77,160; Wilton Construction Company, \$57,532; Giuseppe Molea, \$56,994; John J. Hagerty, 156 East 105th street, \$56,330; Hanover Contracting Company, 215 West 125th street, \$57,749; D. W. Moran, 562 Burnside avenue, \$87,032; Melrose Construction Company, \$58,859.

Rochester, N. Y.—The National Water Main Company will clean water mains for \$3,060.

Syracuse, N. Y.—Edward Joy has been awarded a contract for furnishing a quantity of galvanized wrought-iron pipe to the Bureau of Water.

St. Henry, O.—The Flint & Walding Company, of Kendallville, Ind., has secured contract to furnish tower and tank for water works.

Minco, Okla.—Contracts for water works and electric light plant have been awarded as follows: General construction to Joplin Electric Construction and Supply Company, of Joplin, Mo., \$12,285; pipe, American Cast Iron Pipe Company; pumps, to Smith-Vaile Company; engines, to the Skinner Company; electric equipment, to Wesco Supply Company, and hydrants and valves to the Bourbon Copper and Brass Company.—Engineers, Burns & McDonnell Co., of Kansas City, Mo.

Catasauqua, Pa.—W. H. Von Mengerhausen, city, has secured contract for constructing water works for \$68,500, bids opened April 29.—Geo. Cadogan Morgan, of Chicago, Ill., Engineer.

Hazleton, Pa.—The Diamond Water Company has awarded the contract for the construction of new reservoir above Humboldt, and pipe line, about 4 miles in length; Jacob Jacoby, city, the lowest bidder on the reservoir, was awarded the contract; the reservoir will have a capacity of about 130,000,000 gallons; the breast of the dam will be about 800 feet wide and over 40 feet in height. The pipe line contract was awarded to Michael Yaccino, also city.

Childress, Tex.—Council, May 3, let the contract for a \$40,000 extension to the water system. John B. Hawley of Fort Worth is to construct a system which will include a new lake supply and six miles of additional mains are to be laid at once.

Plainview, Tex.—Contract for constructing water works, bids opened April 15, has been awarded to American Light and Water Company, Kansas City, Mo., for \$32,000.—J. R. De Lay, Mayor.

Ogden, Utah.—The Wheelwright Construction Company, city, has been awarded contract for the construction of distributing reservoir at \$13,771.70.—A. F. Parker, City Engineer.

Mabton, Wash.—The contract for constructing water works has been awarded to the Northwest Bridge Company, of Tacoma, for \$12,100; plans include a 50,000-gallon tank.

Seattle, Wash.—C. F. Graff, Hinkley Block, was awarded the contract for water mains on Bagley avenue, et al., for \$28,302.20.

Tacoma, Wash.—John Gallucci has secured contract for water mains on Puyallup avenue for \$20,923.

Burlington, Wis.—N. F. Reichert has been awarded a contract for laying 2,622 linear feet of 6-inch water pipe, 90 cents; 919 linear feet 4-inch water pipe, 75 cents; seven hydrants, \$15; one hydrant reset, \$10; six 6-inch gates and valve boxes at \$15; three 4-inch gate valves and boxes, \$12; total, \$3,290.05. Totals of other bids were: Wm. Davidson, \$3,591.15; Peter G. Pederson, \$3,896.17; T. H. Iglehart, \$4,629.60.—P. J. Hurlgen, City Engineer.

Calgary, Alta., Can.—The Carter-Halls-Aldinger Company, Winnipeg, Man., has

received the contract for the erection of a dam here in connection with irrigation work; cost, \$155,000.

Gleichen, Alta., Can.—D. F. McArthur, Winnipeg, Man., has received the contract from the Southern Alberta Irrigation Company for ditching in connection with the irrigation of a large tract of land.

LIGHTING AND POWER

Anniston, Ala.—J. R. Minnehan, Chief Engineer for the Alabama Power Development Company, is securing a right-of-way for a water power system between this city and Talladega via Munford and Jackson's Shoals.

Brewton, Ala.—Council is considering improvements to light plant; about \$6,000 will be expended.

Little Rock, Ark.—City is considering the issuing of \$65,000 bonds for electric light plant.—E. A. Kingsley, City Engineer.

Corning, Cal.—The Northern Electric Power Company is making arrangements to increase its supply of electrical energy in Corning and surrounding country from 2,000 to 6,000 horsepower; company will rebuild its old lines and erect new transmission lines throughout the town.—E. V. D. Johnson, Redding, Manager.

Gridley, Cal.—City is considering purchase of the lighting plant and franchises, constituting estate of the late R. F. Beebe.

Oakland, Cal.—Property owners along Telegraph avenue from the junction of Sixteenth street and Broadway to and including Twenty-second street, have been granted permission by the Council to erect electroliners on the avenue between the streets named, the lights to be maintained by the city.

Washington, D. C.—The Mexican Diario Oficial, in its issue of March 12, published the contract between the Ministry of Fomento and the Mexican Petroleum Company whereby the latter company is empowered to utilize water from the River Tamesi, in the State of San Luis Potosi, to an extent not exceeding 28 liters per second, for the requirements of the company's industry at Ebano. The construction of the works must be begun within two years and be completed within seven years from the same date. The company is granted the right to import, free of duty, all machinery, scientific instruments and apparatus necessary for the survey, construction, and subsequent use of the works.—Address No. 3376, Bureau of Manufactures.

Quincy, Fla.—Citizens have voted \$35,000 bonds for improving the electric light plant and water works.

Atlanta, Ga.—The issuance of \$100,000 worth of bonds by the Towalga Power Company, near Griffin, has been validated by the State Railroad Commission; company supplies power to a number of industries in Griffin.

Kellogg, Ida.—City has granted the Washington Water Power Company a franchise for an electric power line.

Elgin, Ill.—City will install 43 more arc lights this month; type similar to that now used at Detroit and Kansas City has been chosen.—Louis Durand, City Electrician.

Bluffton, Ind.—The Indiana Lighting Company, purchasers of the old Ft. Wayne and Lafayette natural gas lines and franchises, is making preparations for piping artificial gas into Bluffton, notwithstanding the City Council has refused a franchise at \$1.25 a thousand; Council wishes the rate to be 80 cents, but the company says it can enter the lighting field under the provisions of the old natural gas franchise.

Indianapolis, Ind.—Mayor Bookwalter has completed plans for making Illinois street, from the Union station to Ohio street; Washington street, from Capitol avenue to Delaware street; Pennsylvania street, from Washington to Ohio street, and Massachusetts avenue a "Great White Way" by altering the present lighting system; plan involves changing all of the poles of the Traction and Terminal Company in the district affected and the substitution of larger and ornamental poles; ten arc lights will be installed in each square.

Indianapolis, Ind.—The Merchants' Heat and Light Company has ordered plans for erection and equipment of a heat and light plant on West Washington street and the canal; cost, \$300,000.

Linton, Ind.—M. R. Ellis, representing Chicago capitalists, has bid \$23,000 for the municipal electric light plant; if bid is accepted plant will be removed to another site and new machinery and equipment installed.

Waterloo, Ia.—A. J. Behymer, of Ellwood, Ind., is promoting a company with a capital stock of \$5,000,000 to \$6,000,000 to construct ten electric lines radiating from this city.

Baltimore, Md.—Bids will be received May 17, noon, for the \$250,000 conduit

loan issue.—J. M. Littig, President Board of Commissioners of Finance.

Baltimore, Md.—Lauraville citizens have petitioned the Highway Commission to install a number of additional lights in the village.

Frostburg, Md.—Bids will be advertised for lighting the town for a year.

Grenada, Miss.—Citizens have voted \$5,000 bonds for improvements to light and water plant.

Fall River, Mass.—Henry C. Anthony, David J. White and John L. Borden have applied for an act of incorporation of the Portsmouth Electric Company; company is to produce and sell light, heat and power generated by means of electricity in the towns of Portsmouth and Middletown.

Wakefield, Mass.—G. A. Fernald & Co. have been awarded the \$25,000 gas and electric light bonds.

Bay City, Mich.—The Electric Light Committee is considering Alderman Rose's idea of side lights on Center and Washington avenues.

El Dorado Springs, Mo.—Citizens have voted to grant B. F. Proctor a franchise for construction of electric light plant.

Armstead, Mont.—Barnett & Bates have decided to construct an electric light plant on Beaverhead River.

Bozeman, Mont.—The Gallatin Valley Electric Railway is considering the purchase of machinery for two sub-stations.

Lewistown, Mont.—Sam W. Gebo has petitioned city for a gas and electric light franchise.

Florence, Neb.—Council is considering a number of petitions for lights.

Battle Mountain, Nev.—The Lander County Power and Light Company has been formed by local capitalists and in a short time the construction of a big electrical power plant will be commenced for the lighting of this town.

Manchester, N. H.—The State Legislature has given authority to build a dam below Goff's falls to the Amoskeag Manufacturing Company; charter grants authority to lay cables in the river and to string wires for the transmission of electric current to the company's mills in this city.

Atlantic City, N. J.—Merchants along Atlantic avenue are urging the installation of a "White Avenue" along the five-mile highway plaza; plan is to have store fronts, street cars and the new electroliners erected by the city painted a snowy white with any necessary trimming in the light blue which makes up the city colors.

Haddonfield, N. J.—For the second time since the question of entering into a five-year contract with the Public Service Corporation was presented Mayor Roberts, of Haddonfield, has vetoed the contract and for the second time Council has sustained the veto; the Borough Council is now discussing the erection of a municipal lighting plant in connection with the water works; possibility of having the same engines to drive both pumps and the dynamos is being considered and it is stated that the plans for the water plant would permit of such a change without affecting in the least manner the original system; plea has been made for a system of underground wires, if such a thing is done, instead of suspending them overhead.

Landis, N. J.—Township Committee has granted the Citizens' Gas Company a 50-year franchise to pipe gas from Millville through the township.

Newark, N. J.—The Municipal Lighting Committee of Council has decided to ask the Finance Committee for an appropriation to cover the cost of obtaining data from an expert to show the cost of running the municipal lighting plant at the City Hall.

Orange, N. J.—Citizens have voted for the establishment of a municipal lighting plant. City Engineer Fred T. Crane has prepared plans.

Paterson, N. J.—The Board of Works has adopted resolution that bids for lighting the streets for a term of five years, from the expiration on July 1 of the present contract with the Public Service Corporation.

Paterson, N. J.—Citizens of the Stony road section have petitioned the Board of Works to have the gas company lay mains in this section.

Pedricktown, N. J.—Citizens are urging the installation of a lighting system.

Princeton, N. J.—Mayor Tom Johnson, of Cleveland, New Jersey & Pennsylvania Traction Company, has made a very attractive offer to Princeton to light the streets of the town; the rates are lower than the present ones.

Albany, N. Y.—The Board of Public Service Commission has approved the permit granted the Municipal Gas Company, of Albany, by the town of Bethlehem to erect and maintain poles, lines, wires and cables and other necessary appliances for the purpose of furnishing electricity for heat, light and power along Delaware avenue

from city line to the Five Mile House, west of Delmar, and in the unincorporated villages of Elsemere, Delmar and Singerslands, in the town of Bethlehem.

Baldwinsville, N. Y.—The Board of Village Trustees in considering the establishment of a municipal electric light plant.—Joseph Hines, President.

Victor, N. Y.—The Public Service Commission of the Second District has granted the petition of the Despatch Heat, Light and Power Company for permission to exercise a franchise in the village for selling electricity.

Asheville, N. C.—The North Carolina Electrical Power Company, a subsidiary of the Weaver Power Company, has announced that as soon as an agreement with the Southern Railway Company can be reached it will begin work on a power plant up the French Broad River a few miles, which will cost about \$450,000, and when completed will furnish a continuous current equal to about 10,000 horsepower; two years will be required to complete the work; dam will be 36 feet in height.

Hendersonville, N. C.—The Appalachian Power Company will construct three dams and develop 50,000 horsepower for transmission by electricity; first dam is to be completed this year.—George E. Ladshaw, Spartanburg, Promoter.

Grand Forks, N. D.—The local street railway company is considering the purchase of a 250-kw. generator.—Thos. D. Campbell, General Manager.

Clarington, O.—Town has received an application from the Clarington Water and Electric Light Company for a franchise to install an electric light system.—F. V. Iams and E. H. Yost, Attorneys.

Perrysburg, O.—The Suburban Light and Power Company has been incorporated, with a capital of \$15,000, by Geo. W. Moser.

Piqua, O.—Council is considering the laying of gas pipes in Camp, Boone, North Greene and Downing streets, Park and Rundle avenues.

Toledo, O.—Council has decided to improve by lighting Rockingham street and Madison avenue.—J. M. Babcock, Clerk.

Chickasha, Okla.—The Chickasha Light, Heat and Power Company will immediately begin the reconstruction of its entire plant in this city and within a short time will have in operation a complete new generating system, driven by new engines; present 1,100-volt plant, which operates single phase at 133 cycles, will be replaced by a three-phase 60-cycle 2,300-volt plant.

Lawton, Okla.—Citizens have voted to grant a franchise to a Tulsa gas company which proposes to develop local fields and pipe into the city.

Chester, Pa.—The Suburban Gas Company, Philadelphia, will spend \$100,000 in increasing the equipments of the plants.

Harrisburg, Pa.—The Special Committee on Lights is considering nine ordinances calling for street lights.

Kecksburg, Pa.—J. M. Keck will build an electric lighting plant here this summer, using water power from a dam he built last summer to operate the light plant; light and power will be furnished for city, private house and business building lighting, as well as for manufacturing plants in this city and in surrounding towns.

Reading, Pa.—The Police Committee will advertise within 25 days for bids for lighting streets and City Hall for a period of either one, two, three, five or ten years.

St. Michael, Pa.—General Manager Holman, Johnstown & Galitzin Street Railway Company, has selected a site in this town for the proposed power house.

Madison, S. D.—Citizens have voted to issue \$16,000 bonds for improving the electric light plant.—M. Rae, City Auditor.

Flaton, Tex.—Paulus & Rhodes have decided to install an electric light plant.

Hubbard City, Tex.—The Union Central Light and Ice Company is considering improvements to its plant, including a new power house, new ice machinery and transmission line to the four surrounding towns; also water works.—W. A. Bass, President.

Arvon, Va.—The Philadelphia Trust & Securities Co., Wilmington, Del., will build water power electric plant on Slate River, near this city; 2,000 brake horsepower will be developed; cost of plant, \$200,000; C. P. E. Burgwyn, Richmond, Engineer in Charge.

Honaker, Va.—Council has drafted ordinances for electric light and water companies, which will soon be offered.

Norfolk, Va.—The Lighting Committee of both branches of the Council has unanimously decided to recommend the franchise be given to the Portsmouth and Norfolk Corporation, the lone bidder.

Montpelier, Vt.—The Corry-Deavitt-Frost Company, city, has decided to proceed with the erection of a second power plant, to be located on the Winooski River about one mile above the present plant situated at Kinney's mills, and will be capable of producing about 1,000 horsepower; P. S.

Terrill, of the General Electric Company, has been engaged to take charge of the new station and will undertake the construction shortly.

Chehalis, Wash.—The Mayor has vetoed the gas franchise ordinance granting the right to manufacture and sell illuminating gas to R. H. Petley, Seattle.

Spokane, Wash.—The Washington Water Power Company, Spokane, will erect a three-story power station in Post's addition.—H. L. Bleeker, Secretary.

Tacoma, Wash.—City will build a 20,000-horsepower plant on Nesqually Cañon; cost, \$2,000,000; surveys are being made preparatory to condemnation proceedings.—F. R. Kelsey, city Engineer in charge.

Sunnyside, Wash.—R. E. Strahorn is considering erection of an electric sub-station at Mayhew and Fifth streets.

Ft. Atkinson, Wis.—The Directors of the Ft. Atkinson Gas Company have accepted plans for a gas plant, including the construction of a gas tank.

Marinette, Wis.—Beginning on June 1 and extending the length of the main street, one of the finest systems of street illumination will be installed, marking the inauguration of the Menominee and Marinette Light and Traction Company's \$1,000,000 power plant at Grand Rapids.

Toronto, Ont., Can.—City will call for bids soon for the laying of underground conduit; work will be done under charge of the Electrical Department.

Victoria, B. C., Can.—City will spend a large sum this year in enlarging its electric light and power plant.—M. Hutchison, Victoria, Superintendent.

Windsor, Ont., Can.—City has estimated that it will cost from \$125,000 to \$130,000 to build a distributing station and transmission lines for Niagara power.

BIDS RECEIVED AND CONTRACTS AWARDED

Oakland, Cal.—The Thompson-Starrett Construction Company, of San Francisco, has secured the contract for a sub-station on Matthew street for the Great Western Electric Company, for about \$45,000.

Pasadena, Cal.—As outlined by Manager C. W. Koerner, the proposed changes of machinery at the city's lighting plant have been authorized, and contracts were closed for more than \$40,000 worth of engines, generators and accessories. For the two generators now at the plant, one 300 kilowatts in capacity and one 250 kilowatts, the Crocker-Wheeler Company will pay the city \$4,375. It will furnish new engines in place of these at a price of \$8,160. Taking into consideration the freight on the returned machinery and all other expenses, the change will cost the city \$5,800 to \$6,300. The city also gets an extra 50 kilowatts on one of the generators. For the new 750-800-kilowatt generator the Westinghouse Electric & Manufacturing Company will be paid \$10,092. This price includes two 50-kilowatt exciters. The new generator will be a 2,500-volt machine and will develop 883 kilowatts, besides being capable of a 25 per cent overload, making a total of more than 1,000 kilowatts' capacity. Next in order is a cross-compound condensing engine to be furnished by the C. C. Moore Company for \$19,500. Next comes a condenser, vacuum pump and circulating pump, all of which will cost \$4,553.

Colfax, La.—The stockholders of the Colfax Gas Well Company have let a contract to Oscar Shanks to sink a well east of the railroad, near the Foulke brick plant.

Baltimore, Md.—Contracts involving about \$70,000 in conduits for the Subway Commission were awarded by the Board of Awards May 5; the Great Eastern Clay Company, of New York, was awarded the contract for supplying one lot of terra-cotta conduits, comprising about 1,000,000 feet, at its bid of about \$60,000, while a lot of 100,000 feet, to cost about \$10,000, was divided between the American Conduit Company and the Fiber Conduit Company.

Haverhill, Mass.—The High School Commission has voted to award the contract for the electrical work in the new building to the lowest bidder, M. B. Foster Electric Company, of Boston, whose figure submitted was \$15,775.

Buffalo, N. Y.—Bids for the construction of the proposed electric lighting plant at City Hall, estimated to cost about \$25,000, opened May 1 by the Board of Trustees and rejected, were as follows:

Electric wiring—McCarthy Brothers & Ford, \$23,280; F. P. Little & Co., \$24,350; J. C. Stearns Electric Company, \$31,000; Walter Reimann, \$28,743; Sackett Electric Construction Company, \$29,722.

Manufacture of concrete as per specifications—General Electric Company, \$4,110; Allis-Chalmers Company, \$3,650; Fairbanks & Morse Co., \$2,950 (\$105 for installation); McCarthy Brothers & Ford, \$3,345 (alternative offer, generator delivered as per second specifications, \$3,185).

Engines—General Mercantile Company, to furnish Victor engine from the Erie Engine Works, \$4,000; Ames Iron Works, Oswego, \$4,470; Skinner Engine Company, Erie, Pa., \$4,935; Ridgway Dynamo & Engine Company, Ridgway, Pa., \$4,944; Richard Radley, \$4,677.74; McCarthy Brothers & Ford, power plant complete, engines, generators, wiring, ventilation fixtures, \$55,000.

Ventilating—General Electric Company, steam turbines complete with generators, \$2,946; Martin, Fisher & Sons, \$2,500; Bickley Fan Company, \$2,332; John W. Danforth Company, \$2,217.

Carpentry and masonry—Joseph B. Belenca, \$640; Charles Gruber, \$350; Buffalo General Building Company, \$462.

Tiling—Waldbridge & Co., \$1,384.15; Alvin W. Day, \$984; Mosaic Marble & Mantle Company, \$1,169; Fox-Davis Mantle Company, \$1,175.

Painting—F. T. Coppins & Son, \$198; Joseph A. Goatsey, \$115.

Outside standards—Wahle, Phillips Company, New York, \$2,340.

Lamps—McCarthy Brothers & Ford, \$3,650; Standard Electric Manufacturing Company, \$3,870.75; Colonial Electric Company, Warren, O., \$3,870.75.

Repairs to pumps—Snow Steam Pump Company, \$29.37.

Steam fittings—John W. Danforth Company, \$1,837; Timothy McEvoy & Sons, \$1,465; J. H. Rucker & Son, \$2,383.

Brass railing—J. H. Rucker & Son, \$410; Zero Valve & Brass Manufacturing Company, \$417.

Fixtures—McCarthy Brothers & Ford, \$20,250; Art Gas & Electric Company, \$23,887; Horn & Brannon, Philadelphia, \$27,829.50, with an allowance for old fixtures of \$1,000; Moreau Gas Fixture Company, \$25,000; Wahle, Phillips Company, New York, No. 1, \$24,000; No. 2, \$27,000.

Storage batteries—McCarthy Brothers & Ford, \$3,000; National Storage Battery Company, \$2,579.21; Gould Storage Battery Company, \$2,700.

New York, N. Y.—Bids were received April 16 by Allen N. Spooner, Commissioner Department of Docks and Ferries, for furnishing all labor and materials required for the furnishing and installing mechanical and electrical equipment on piers No. 53, 54, 57, 58, 59, 60, 61 and 62, North River, between Bloomfield and West Twenty-second streets, on Chelsea Section in the Borough of Manhattan; the contract has been let to the North Eastern Construction Company, 225 Fifth avenue, at \$745,000.

Columbus, O.—The Board of Service awarded to the Allis-Chalmers Company, of Milwaukee, the contract for the 2,000-kilowatt turbine generator for the municipal light plant; only two bids were received, the other being from the Westinghouse company, of Pittsburgh; there was difference between the bids of \$1,200; the bid of the Allis-Chalmers Company was \$31,800. The Pittsburgh firm claimed that its generator was better than the one purchased, and that because of irregularities in the Allis-Chalmers' bid it would enjoin the city from entering into any contract.

Hartwell, O.—Contract for furnishing material and installing electrical equipment for power plant to be constructed at city infirmary has been awarded to the General Electric Company, of Cincinnati; bids opened April 16.

Wilkes-Barre, Pa.—The contracts for the installation of the power plant for the new high school building were awarded by the School Board May 3, a report from the Committee of the Whole recommending that the lowest bidder in each case be awarded the work; the Heine Boiler Company, of St. Louis, is to install the boilers; Storm & Co., of Newark, N. J., the power, heating and ventilating machinery, and Shepherd & Rust, of this city, the electrical work.

Dallas, Tex.—Upon Commissioner Doran's recommendation, the contract was let to the Dallas Electrical Construction Company for the wiring of the basement, for the placing of eight ceiling fans in the lower part of the City Hall, six of the fans to be new eight-blade, alternating current devices. The bid was \$14.20 for the wiring and \$174 for the fans. Other bids were: W. M. Clower, \$29 for wiring and \$174 for fans; Cockrell & Andrews, \$21 for wiring and \$177 for fans.

Washougal, Wash.—The Pacific Electric Engineering Company, of Portland, Ore., has secured contract for a complete electric plant for Washougal; the new plant will be known as the Western Light and Power Company and is to be in operation September 1.

FIRE EQUIPMENT

Birmingham, Ala.—City has purchased a site on Fountain Heights for the fire station to be established in that section.

Birmingham, Ala.—Retiring Mayor G. B. Ward has recommended the establishment of a fire station on Fountain Heights with

an automobile engine; also the elimination of all horses and the adoption of auto fire engines for all stations.

Elyton, Ala.—Funds are available for the purchase of a combination chemical and hose wagon.

Plateau, Ala.—City is considering purchase of a chemical engine.

Los Angeles, Cal.—Gardena will organize a volunteer fire department and will purchase a chemical engine.

Oroville, Cal.—A fire department has been organized; apparatus and equipments will be purchased.

San Francisco, Cal.—Auditor John A. Koster has recommended substantial increases in new locations, as the hilly sections are without adequate fire protection.

Bridgeport, Conn.—The Board of Fire Commissioners is considering the remodeling of Chemical House No. 4 on Middle street.

Brooksville, Fla.—Town has organized a volunteer fire company; equipment will be purchased.—A. J. Walker, Chairman Committee.

Galesburg, Ill.—City will purchase 1,000 feet of hose; a new steamer is badly needed.

Indianapolis, Ind.—Architects Foltz & Parker have prepared plans for a \$20,000 fire house for the Board of Public Safety.

Sioux City, Ia.—Chief George Kellogg has recommended that the old aerial truck be rebuilt or a new one purchased at once; that another fire engine be purchased and that the heavy chemical apparatus at Morningside be superseded by lighter.

Baltimore, Md.—Bids will be received May 17, noon, for the \$500,000 4 per cent fire engine house loan issue.—J. M. Littig, President Board of Commissioners of Finance.

Frostburg, Md.—Council is considering improvements to fire building.

Myersville, Md.—Citizens are considering better fire protection.

Williamsport, Md.—City will purchase a steam fire engine and a combination chemical and hose wagon.

Brookfield, Mass.—Town will vote on purchase of a hook and ladder truck.

Greenfield, Mass.—Town has decided to purchase 500 feet of hose.—Chief Partenheller.

Hull, Mass.—Town will purchase a new fire engine for the Atlantic Hill section.

Detroit, Mich.—Fire Department is considering erection of a \$45,000 house.—G. W. Stockwell, Secretary.

Detroit, Mich.—The Board of Estimate has restored to budget an item of \$45,042 for a site and house for a new engine company in the Eighteenth Ward.

Saginaw, Mich.—Chief Wallis has recommended hose, liquid chemical extinguishers and a 2-inch water pipe for the Auditorium; also a fire escape from the gallery window on the north side.

Minneapolis, Minn.—Architects Downs & Eads have prepared plans for two fire stations; cost, \$37,000.—J. R. Canterbury, Chief.

Spooner, Minn.—Town will vote on \$2,000 bonds for fire apparatus.

Kansas City, Mo.—Chief Egner has recommended that the city appropriate \$407,519 for building six fire houses, to purchase an auto for chief, and a combination auto for apparatus to cover long runs; also for installation of fire alarm box system.

St. Louis, Mo.—Superintendent Quain, of the Fire Alarm and Police Telegraph Bureau, has recommended that the city appropriate \$14,000 for a new storage battery plant and \$52,833.80 for extending the underground fire alarm cable system.

Springfield, Mo.—Hydraulic Engineer Townsend has advised city to reorganize department, to provide soft suction-line for steamers, a quick-hoisting hook and ladder truck for South Springfield, 35-gallon chemical tank and 1,000 feet of hose, nozzle, etc., with 1,000 feet of hose in reserve, and eight more fire alarm boxes.

Florence, Neb.—The Fire Department has asked for new apparatus and house.

Omaha, Neb.—Citizens have voted bonds for the erection of an engine house.

Bayonne, N. J.—Chief Alfred Davis has asked Council for an automobile equipped with two 35-gallon chemicals.

Irvington, N. J.—Council has passed final reading ordinance for the erection of a fire house on Coit street; also ordinance providing issue of \$7,500 bonds to cover cost of building.

Lefferts Park, N. J.—The Local Improvement League is considering better fire protection.

Newark, N. J.—The Fire Board has included the following appropriations in its budget: New engine, \$6,000; new chemical wagon, \$2,250, and machinery, \$4,000.

Ocean City, N. J.—The Council has decided to readvertise for bids for an automobile chemical engine; Council, some months ago, awarded the contract for a machine and bonds for its purchase were issued; Mayor Cresse has refused to sign

these bonds, claiming that the award was not legally made.

Trenton, N. J.—Council is considering an ordinance providing for the purchase of two self-propelling engines.

West New York, N. J.—Town will organize and equip a fire company.

Wildwood Crest, N. J.—Town will purchase a chemical engine.

Buffalo, N. Y.—Mayor Adam has approved a \$1,500 appropriation for an automobile for Assistant Fire Chief Murphy.

Catskill, N. Y.—Town is considering purchase of a gasoline engine; cost, \$2,500.

Scarborough, N. Y.—The Archville fire department is considering need of 150 feet of hose and an improved fire alarm system.

Columbus, O.—Council is considering the erection of another fire house in the Hill Top district on West Broad street.

Conneaut, O.—Council is considering the purchase of a fire engine.

El Reno, Okla.—Citizens have voted \$20,000 bonds for a new fire station.

Chester, Pa.—Council has passed first and second readings ordinance providing for the purchase of a combination chemical and hose reel for the Franklin Fire Company; also adopted specifications for the new engine to be purchased for the Hanley Hose Company.

Johnstown, Pa.—The Fire Commission has decided on the purchase of 2,000 feet of hose, a new chemical wagon for Engine Company No. 4, and another turret pipe; contracts will soon be awarded by Chief Keller.

Mt. Joy, Pa.—Borough Council has decided to purchase a fire engine; Councilman John G. Reist and Fire Chief Martin Spickler have been appointed a committee to inspect steam and gasoline fire engines at Berwyn, Ardmore and other places near Philadelphia, to ascertain what kind it would be advisable to get.

Phoenixville, Pa.—Town Council has decided to purchase an auto combination truck.

Scottdale, Pa.—Chief J. R. Deckerhoff of the Fire Department has recommended that longer ladders be purchased and that four fire and police telephones be placed on poles in prominent places in town.

Scranton, Pa.—Mayor John Von Bergen, Jr., has signed ordinances for new fire houses on Cedar and South Irving avenues and the providing of better quarters for Hose Company No. 2.

Williamsport, Pa.—The Fire Committee will offer a resolution providing for advertising for bids for supplying city with 2,000 feet of hose.

Providence, R. I.—Architect E. I. Morrell has prepared plans for the erection of an engine house at Stafford Road and Anthony street.

Amarillo, Tex.—City has decided to improve its fire equipment.

McKinney, Tex.—Citizens will vote May 31 on bonds for the erection of a fire station and City Hall.

Rosalie, Wash.—City has decided to purchase a ladder truck.

Seattle, Wash.—The Board of Public Works will receive bids May 14 for furnishing six monitors for the use of fireboat.

Iron River, Wis.—City will purchase 500 feet of hose for the fire department.

Kingston, Ont., Can.—City will reorganize its fire department; a new engine is needed.

BIDS RECEIVED AND CONTRACTS AWARDED

Burlington, N. J.—The following bids for fire hose were received, and will be acted on at the next regular meeting: United Globe and Rubber Co., Trenton, 80 cents; Empire Manufacturing Co., of Trenton, 80, 75, 70 cents; Mineralized Rubber Co., New York, 72 cents; New Jersey Spring Rubber Co., 80 cents; Acme Rubber Co., 75 cents; Cornelius Callahan Co., Boston, Mass., 75 cents; Revers Rubber Co., Philadelphia, 85 cents; Eureka Fire Hose Manufacturing Co., 85 and 75 cents; Fabric Fire Hose Co., New York, 95, 85 and 80 cents; Voorhies Manufacturing Co., 90 cents; Quaker City Rubber Co., 63 and 59 cents.

Rochester, N. Y.—The Board of Contract & Supply has awarded the contract for furnishing 24 Gamewell fire alarm boxes to the Gamewell Company for \$2,160.

Wilkes-Barre, Pa.—When the report of the Fire Committee recommending that the Eureka Fire Hose Company furnish 1,500 feet of hose at \$1.10 per foot went over from Select Council to Common Council for concurrent, Mr. Schobert stated that he was of the belief that the price was exorbitant; members of the Fire Committee sent for the samples, and, following an inspection of the several brands of hose the committee's reports was adopted.

Dallas, Tex.—Bids for the erection and equipping of the Oak Lawn fire station were read and referred to Commissioners Seay and Doran. They were as follows: For plumbing, Harry Kahn, \$694; P. J.

Sheehan, \$714. For electrical work, Dallas Electrical Construction Company, \$73.65; Lipscomb Electric Company, \$129.35. For building on plans of Hubbel & Greene there were eight bids, as follows: H. H. Gowins, \$14,520; Wood & Dean, \$15,300; Hughes & O'Rourke, \$14,959.08; Lowman & Wesch, \$15,180, with modifications in bid if roof is varied; H. M. Barglebaugh, \$15,748; Jackson & Wolf, \$15,245, with possible reduction in roof modifications; D. A. McCord, \$15,672; Hewitt Construction Company, \$12,840.

Seattle, Wash.—The contract for a signal switchboard for the Police Department was awarded to the Gamewell Fire Alarm Company at \$786.

Benwood, W. Va.—A new lock-up is to be a feature in the construction of Benwood's new Fire Department building; there will be two cells, both in the basement of the building, made of iron throughout and built along the latest lines of serviceability and safety; four bids for the work on the new station were received and the contract was given to the lowest bidder, A. C. Fisher, of South Wheeling. His bid was \$4,515. The others were: J. M. Murphy, \$4,750; McDonald Planing Mill, \$5,147; T. H. Markey, \$4,973.

ELECTRIC RAILWAYS

Newport, Ark.—J. A. Picroll, Louisville, Ky., is considering building of an interurban line from Corning to Maynard.

Fresno, Cal.—The Fresno, Hanford & Summit Lake Interurban Railway has applied to the Board of Supervisors for a 50-year franchise for an electric railway over certain streets in Fresno County.—F. S. Granger, Representative.

Palo Alto, Cal.—F. E. Chapin, General Manager of the San Jose-Los Gatos Interurban Railway, which controls the Palo Alto street railway, has conferred with the Trustees of this city and Mayfield in regard to securing a franchise for a double-track road to San Jose, which will be an extension of the Palo Alto street railway system.

Sacramento, Cal.—The Sacramento & Sierra Railroad has been incorporated to construct an electric railway from this city to Lake Tahoe via Orangeville, Georgetown and Jackson Springs; distance, 126½ miles; capital stock, \$1,000,000.—B. F. Hulings, Local Representative.

San Francisco, Cal.—Property holders on Church street are urging the installation of a street car line on that thoroughfare.

San Francisco, Cal.—The resolution directing the sale of a franchise for the operation of a street railway on Stockton, Bay and other streets has been passed to print by the Supervisors.

San Jose, Cal.—A movement is on foot to build a double-track electric railroad from Palo Alto to San Jose; petition has been in circulation among the leading residents of Palo Alto asking the Manager of the San Jose & Los Gatos Interurban Railway to extend the Palo Alto Railway over the old Parkinson franchise to the cut-off junction at Mayfield and thence through Monte Vista, Los Altos and Cupertino to San Jose.

San Rafael, Cal.—City has received petition from E. B. Martinelli for a franchise to construct an electric road from Manzanita station to Coyote Canyon; distance, about three miles.

Wilmington, Del.—The People's Railway has been granted a franchise to extend its tracks on East Fourth street, from Church to Bridge street.

Washington, D. C.—S. S. Yoder, Vice-President and General Manager of the Washington, Spa Springs & Gretna Railroad, which is projected to run into the District along Bladensburg road, has been in conference with officials of the Engineer Department of the District Government regarding the approval of the plans of the road construction and the cost of putting the street on which the tracks are laid in good shape after the railway roadbed is in place.

Macon, Ga.—The Chamber of Commerce is urging the extension of the Vineville electric line to a point just beyond Crum's Park and the extension of the Bellevue line to the same place.

Cairo, Ill.—County Board has granted a right-of-way to the Cairo & St. Louis Railway over the county road from the north end of Future City to about 800 feet above the Half Way House.

East St. Louis, Ill.—The St. Louis & Chester Railway has been incorporated to build an electric railway from this city to Chester, passing through the counties of St. Clair, Monroe and Randolph; capital stock, \$100,000. Rudolph Stecher, Murphysboro; Eugene W. Ziegenhein, Richard A. Stack, East St. Louis; Edward Schwitz and William F. Bentzen, St. Louis, Mo., Incorporators.

Ft. Wayne, Ind.—Definite announcement has been made that a new electric line joining Ft. Wayne and Defiance, O., has been financed, and that construction work will begin within two weeks; distance is 43 miles; road will follow the old canal bed for the greater part of the way and will parallel the Wabash from Defiance to Cecil, and for 18 miles east of Ft. Wayne will parallel the Nickel Plate road; it will be known as the Toledo, Defiance & Ft. Wayne road.

Ft. Wayne, Ind.—The Retail Merchants' Association has endorsed the building of a new interurban line from Bryan to Ft. Wayne, and will urge local capitalists to subscribe the \$40,000 stock allotted to this city; line is on the other side of the Maumee River, and is different from the Defiance-Ft. Wayne line, already underwritten.

Indianapolis, Ind.—The Shore Line Traction Company has incorporated to construct and operate an electric railway in Indiana; capital stock, \$10,000. Joseph F. Weber, Frank T. Edenharter and George F. Mull, Directors.

Warsaw, Ind.—Council has granted a franchise to the Wabash & Northern Traction Company, J. A. Barry, representative, which proposes to construct a line from Wabash to this city; J. H. Todd, Indianapolis, representing the Terre Haute, Indianapolis & Eastern Traction Company, is also seeking a franchise and right-of-way for a line from Wabash to this city.

Centerville, Ia.—Business men are investigating various propositions for building an interurban line from Mystic and Cincinnati to this city.

Augusta, Me.—During the present year the Lewiston, Augusta & Waterville Street Railway will expend \$100,000 in the improvement of its line; large part of this will be spent on the division between Augusta and Gardiner, where new rails will be laid and the track newly ballasted.—John R. Graham, President.

Annapolis, Md.—The Washington, Baltimore & Annapolis Electric Railway Company will extend its line so as to pass through the village of Eastport, extend to old Bay Ridge and connect with Arundel-on-the-Bay, a small summer resort about five miles from Annapolis.

Escanaba, Mich.—The local electric street railway company is considering the extension of its line from this city and Wells to Rapid River via Gladstone.

Eveleth, Minn.—P. E. Dowling proposes to draft a franchise for a street railway for the ten range towns and sell it to the highest bidder.

Beatrice, Neb.—The Commercial Club is considering a proposition of W. H. Sprague, Cleveland, O., for the construction of a street car line.—O. P. Fulton, Secretary.

Atlantic City, N. J.—The Venice Park Railroad will be incorporated to build a street railway from Ohio avenue to Gramercy avenue; distance about 1 mile.

Jersey City, N. J.—Mayor WittPenn has written to the Public Service Railway Company requesting that the company give him a written agreement to build the Tonelle avenue trolley line extension from Newark avenue to the Penn Horn Creek next year.

New York, N. Y.—The Triborough Railroad has been incorporated to operate a double-track electric street railway, from the intersection of Canal, Walker and Baxter streets, in Manhattan Borough, to the intersection of Fulton street with Flatbush avenue extension, Brooklyn; capital stock, \$50,000. William Bradley, James E. Gaffney, Henry Steers, New York, and William E. Bolte, Maywood, N. J., Directors.

Charlotte, N. C.—David Barry, of Amherst, Mass., and James W. Barry, of this state, have been granted a franchise to build an electric trolley system in Concord and Cabarrus County; work on the system, which will cost between \$100,000 and \$150,000, will be commenced in June.

Grand Forks, N. D.—The local street railway company will place contracts very soon for the construction of 3½ miles of new track.—T. D. Campbell, General Manager.

Fremont, O.—Business men will discuss the proposed electric railway to connect the cities of Bucyrus, Tiffin and Fremont. Prominent citizens of these three places and the other towns through which the line would pass will attend the meeting. It is hoped that each city and town will finance the line for a certain distance.

Marysville, O.—The controlling interests of the Toledo, Fostoria & Findlay are considering the feasibility of extending the line from Findlay to Columbus via Kenton and Marysville; Engineer L. B. Harvey, city, has been requested to make a profile of the old Findlay & Southern route, which he surveyed and made a plat of a few years ago; route was surveyed through from Kenton to Dublin, and strikes Kenton, Mt. Victory, Byhalla, Summersville, Broadway, Marysville, Unionville Center, Plain City and Dublin.—U. K. Strongfellow, of

Findlay, is one of the promoters of the enterprise.

Piqua, O.—Council has passed an ordinance granting to the Pittsburg, Cincinnati, Chicago & St. Louis Railway Company a right-of-way for an additional side track across Washington Lake.

Tiffin, O.—The Ohio Northern Electric Railway Company has been incorporated by George W. Stewart, James S. Gray, B. F. Whitney, K. Feickert and E. A. Whiting to build an electric interurban railway from Bucyrus to this city, thence to Toledo; capital, \$50,000.

Oregon City, Ore.—The Clackamas Southern Railway Company will construct an electric railway from this city to Beaver Creek, Mulino, Liberal, Molalla, Marquam and Silverton or Mt. Angel.

Philadelphia, Pa.—Petitions urging the construction of a street car line to connect Roxborough and Germantown over the Walnut lane bridge have been handed to President Parsons, of the Rapid Transit Company, by representatives of the Twenty-first Ward and Germantown business men's associations.

South Hampton, Pa.—The Philadelphia Suburban Traction Company has applied for a charter for a company to build an electric street railway from South Hampton to Hatborough.—W. A. Merrick and W. E. Watt, of Newtown, Pa., Promoters.

Washington, Pa.—C. S. Caldwell, J. W. McKay, Moulton J. Hosack, E. B. Hartman, Jr., and Roger Knox made an application for a proposed corporation to be called Washington-Marianna Street Railway Company; the length of the route is nine-tenths of a mile.

York, Pa.—The York Railways Company has secured permission from the County Commissioners to construct, maintain and operate a line on West Market street.

Laurens, S. C.—Joseph E. Sirrine, of Greenville, S. C., has been awarded contract to survey for the proposed electric railway from this city to Clinton, S. C.

Nashville, Tenn.—Council has received an application from the Nashville Railway & Light Company for a franchise to extend its tracks out Broadway and the Hillsboro Pike.

Denison, Tex.—The Denison and Sherman Railway has agreed to extend its city line from Mirick avenue to Crockett avenue on Hull street, provided the property owners on Hull will give a bonus of \$10 per lot.

Sherman, Tex.—Council has granted a franchise to the Texas Traction Company to connect its tracks with those of the Denison & Sherman Railway.

Toppenish, Wash.—F. A. Williams, city, and Otto Lube are considering a plan to build an electric railway from this place to Zillah and return via Wapato.

Wheeling, W. Va.—The Wheeling Traction Company Directors have decided upon big improvements; about 1,500 shares of treasury stock were ordered sold, and from the revenue eight new cars of the type used on the Pan Handle division will be secured; line will be extended through Rayland and a new feed cable will be purchased and strung from the power house to Martins Ferry; about \$6,500 will be spent in equipment for Pan Handle cars, the track in Steubenville will be partially replaced with heavier rails and about a mile and a half of the track on the Moundsville division will be replaced.

Janesville, Wis.—Council has granted a franchise to the Cincinnati Construction Company to run cars along various streets; company also plans to build an interurban line between Madison and this city.

Sparta, Wis.—The Sparta & Melrose Electric Railway and Power Company has finished surveys for the construction of its projected 28-mile line from this city, through Anglo, Trout Falls and Cataract, to Melrose; contracts will be let about May 15.—C. Oehles, 402 American National Bank Bldg., St. Paul, Minn., Chief Engineer.

Stratford, Ont., Can.—N. M. Cantin, St. Joseph, has submitted a proposition to Council on behalf of New York capitalists to build an electric railway between St. Joseph and Stratford; distance of about 65 miles.

BIDS RECEIVED AND CONTRACTS AWARDED

Bozeman, Mont.—The Westinghouse Electric and Manufacturing Company, Pittsburg, has closed contract covering the line material for the Gallatin Valley Electric Railway Company, of Bozeman, Mont., for 18 miles of new line.

Johnstown, Pa.—At a meeting at the local offices of the company, May 5, a number of contracts were let for the Southern Cambria Street Railway, preliminary to the immediate resumption of work and early completion of the line as far as South Fork. The contract for the electrical work, including the generators, etc., was awarded to the General Electric Company,

of Schenectady, N. Y. To the Pittsburg agency of the Babcock & Wilcox Company was given the contract for the boilers at the power house. The engines are to be built by the Filer & Stowell Company, Milwaukee. To the Roebling Company, Trenton, N. J., was awarded the contract for the copper wire. All the material contracted for is to be delivered and placed in three months from date.

Salt Lake City, Utah.—The Westinghouse Electric and Manufacturing Company, Pittsburg, Pa., has received a contract from the Falkenau Electric Construction Company, of Chicago, engineers for the Salt Lake & Ogden Railway Company, covering direct suspension line material for the 37 miles of electrification of the present steam road between this city and Ogden.

BRIDGES

Gadsden, Ala.—The Louisville & Nashville Railroad Company will begin work within 30 days on the proposed steel bridge across the Coosa River; cost, \$500,000.—W. H. Courtney, Chief Engineer.

Huntsville, Ala.—City is considering construction of ten concrete bridges.—F. E. Murphy, City Engineer.

New Haven, Conn.—The New York, New Haven & Hartford Railroad Company is having plans prepared for a 60-foot span bridge over the Darby road and Campbell avenue.—Edw. Gagel, Chief Engineer.

Wilmington, Del.—Chief Engineer Kinsman, of the Baltimore & Ohio Railroad Company has conferred with the Park Commissioners regarding a \$500,000 stone bridge over Brandywine Creek; new bridge, which will be the largest ever built in Delaware, will have five stone piers and will be erected 100 yards below the present steel structure.

Hailey, Ida.—The petition for a bridge across Big Lost River has been granted and bids will be called for the erection at once.

Payette, Ida.—The County Commissioners are considering erection of a new bridge over the Payette River.

London Mills, Ill.—Plans have been prepared by Engineers Waddell & Harrington, New Nelson Bldg., Kansas City, Mo., for two steel plate girder spans for the Iowa Central Railroad.

Peoria, Ill.—Plans and specifications have been prepared for the substructure of the proposed Peoria & Pekin Union Railroad bridge; cost, \$250,000.

Evansville, Ind.—Vanderburg County has decided to construct a 50-foot concrete bridge and a 12-foot arch culvert.—August Pfafflin, County Engineer.

Boone, Ia.—The County Supervisors are considering erection of a new 230-foot bridge at Elk Rapids.

Garden City, Kan.—Finney County will construct a reinforced concrete bridge.—Captain G. L. Holmes, Commissioner.

Hutchinson, Kan.—The Santa Fe Engineers have decided that the only proper bridge to build across Cow Creek is one spanning the entire width of the stream; Santa Fe bridge across the creek is soon to be replaced by a new one and the best engineers of the road have informed the Commission that road would not build a culvert or any kind of a bridge with arches.

Leavenworth, Kan.—The Board of County Commissioners has made an order to H. A. Perkins, County Engineer, to make estimates and plans for three concrete bridges, two to be built in Tonganoxie Township and one in Alexandria Township; estimates and plans are to be submitted to the Board in June; bridges will probably cost several thousand dollars.

Mt. Sterling, Ky.—Montgomery and Clark counties will build a joint steel bridge over Lulbegrud Creek on the Kiddville pike; work is to be begun in a short time.

Lawrence, Mass.—The Committee on Cities has reported favorably on bill to permit construction of a bridge over South Union street to connect the Wood and Ayer mills.

Newburyport, Mass.—Essex County Commissioners have rejected bids for the rebuilding of chain bridge between this city and Salisbury; bids will be readvertised.

Somerville, Mass.—House has passed a bill authorizing city to construct a bridge over the railroad tracks at Lowell street; estimated cost, \$31,200.

Manton, Mich.—Citizens of Hanover Township, Wexford County, have voted to build a bridge over the Manistee River.

St. Paul, Minn.—Senate has passed bill authorizing St. Paul and Minneapolis to issue \$150,000 bonds for construction of Summit avenue bridge.

Kansas City, Mo.—City is considering construction of five or six concrete bridges.—J. L. Darnell, City Engineer.

Kearny, N. J.—Council has petitioned Board of Freeholders to unite with Essex County and erect another bridge across the

Passaic between Elmwood avenue, Newark, and South Midland avenue, this city.

Mount Holly, N. J.—The County Engineers of Atlantic and Burlington Counties will determine repairs needed to the Chestnut Neck county line bridge over the Mullica River.

Trenton, N. J.—The Board of Freeholders has decided to have the ironwork of the Olden avenue bridge repaired at a cost not to exceed \$1,000.

West Milford, N. J.—Township Committee has asked Board of Freeholders for the repair of four culverts.

Avon, N. Y.—The Boards of Caledonia and this town are considering the construction of a bridge over the Genesee River, using abutments of the present structure; estimated cost, \$10,000.

Laconia, N. Y.—The City Council has authorized bids for a new bridge to replace present structure over Church street; cost, \$14,000.

Troy, N. Y.—City is considering construction of a concrete or steel arch, with about 40-foot span.—E. L. Grimes, City Engineer.

Carthage, N. C.—Bids will be received May 31, 2 p. m., for the purchase of \$16,000 5 per cent bridge bonds.—N. A. McKeithen, Chairman Moore County Board of Commissioners.

Cincinnati, O.—The Commissioners have authorized the County Surveyor to prepare plans for the construction of a bridge over Muddy Creek at the end of the Lowland road, near Fernbank; cost, \$6,473.

Cleveland, O.—Citizens have defeated proposition to issue \$1,675,000 bonds for reconstructing the superstructure of the Superior street viaduct.—Peter Witt, City Clerk.

Findlay, O.—The Board of Public Service has adopted a resolution to construct a culvert across Rector avenue.

Lima, O.—Plans are being prepared by C. E. Craig, Engineer, Allen County, for a 38-foot concrete arch in Auglaize Township.

Van Wert, O.—Bids will be received by the Board of Commissioners of Van Wert County about May 20 for various bridge work; plans have been completed.

West Carrollton, O.—Montgomery County Commissioners have decided to erect a bridge over the Miami and Erie Canal at the paper mills.—F. E. Tunison, Clerk.

Muskogee, Okla.—County Commissioners will submit a \$450,000 bond issue to the voters of Muskogee County; of this amount, \$225,000 will be used for bridge and road purposes.

Tulsa, Okla.—City is considering construction of a viaduct on Third street.—J. C. Hughes, City Engineer.

Ashley, Pa.—Council has notified the Wilkes-Barre and Hazleton Railroad to erect a substantial bridge over Prospect street.

Fountain Hill, Pa.—The Street Committee has reported that Messrs. Bingel, Heinley, Trumbauer, Miller and Ueberroth had decided that instead of making repairs to the bridge at Broadway and Clewell street, as instructed at the last meeting, that a concrete culvert would be necessary and had instructed the Borough Engineer to prepare plans and specifications, and authorized the Street Committee to advertise for bids.

Phoenixville, Pa.—County Commissioners are considering the repair of the bridge over the Schuylkill between this borough and Model Clare.

Pittsburg, Pa.—Bids will be received May 14 by Comptroller Morrow for \$660,000 bonds for preliminary work in connection with the construction of the \$1,000,000 bridge at the point and for water improvements.

Plymouth, Pa.—Luzerne County Viewers have submitted a report recommending the construction of a bridge over Susquehanna River, from Hanover street, Plymouth, to Old Ferry Road, in Breslau, Hanover Township; cost, \$175,000.

Scranton, Pa.—Mayor John Von Bergen, Jr., has signed ordinances asking an estimate for a new concrete bridge at Hickory street over the Roaring Brook.

Valley Forge, Pa.—County Commissioners will confer with Park Commissioners regarding the erection of a bridge at this point.

Nashville, Tenn.—House has passed Senate bill authorizing Hamilton County to issue \$250,000 bridge bonds.

Carthage, Tex.—The Attorney General has approved the \$15,000 Panola County bridge bond issue.

Hillsboro, Tex.—Hill, Whitney and Bosque counties are considering the construction of a bridge over Brazos River.—R. W. Hunt, of Hillsboro, Auditor, Hill County.

Bellingham, Wash.—County Engineer has been directed to prepare plans for the erection of the Riddle slough bridge and wing dam.

Conconully, Wash.—County Commissioners have decided to allow \$1,000 toward the

construction of a \$2,000 bridge over the Methow River near town of Winthrop.

Raymond, Wash.—Council will issue bonds to cover in part the cost of the construction of two bridges across the Willapa and South Willapa rivers at this place; estimated cost, \$30,000 each.

Seattle, Wash.—City Engineer R. H. Thomson has estimated cost of the Dearborn street improvement, including erection of a steel bridge over Dearborn at Twelfth avenue, at \$426,000.

Tacoma, Wash.—Plans are now being prepared for four concrete arch bridges and one steel span; cost about \$300,000.—F. L. Davis, City Engineer.

Grafton, W. Va.—The County Court has approved plan of the Grafton Traction Company for the construction of a new bridge crossing the Tygart Valley River from the foot of Latrobe street to the west side of the city, to replace the old one and the matter will be urged upon Council.

Wheeling, W. Va.—City is considering erection of a concrete bridge at Market street.

Milwaukee, Wis.—City Engineer Charles J. Poetsch has prepared preliminary plans and specifications for a one-leaf bascule bridge across slip at Cherry street; estimated cost, \$45,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Birmingham, Ala.—The Board of Revenue has let contract for the construction of a concrete culvert on the Mount Pinson road costing \$1,250 to the Southern Engineering Company.

Leipsic, Del.—Peace and Kenty County has awarded contract for constructing steel bridge over Leipsic River, bids opened April 7, to the Canton Bridge Company, of Canton, O., for \$7,164.—S. W. Darby, Jr., Clerk.

Chicago, Ill.—The following are the totals of bids opened April 28 by the Trustees of Sanitary District of Chicago for superstructures of five highway bridges to cross North Shore Channel: Penn Bridge Company, Beaver Falls, Pa., \$17,778; Milwaukee Bridge Company, Milwaukee, Wis., \$16,068; Toledo-Massillon Bridge Company, Toledo, O., \$15,960; Geo. W. Jackson, Inc., Chicago, \$14,904; McClintic-Marshall Construction Company, Chicago, \$17,180; Ft. Pitt Bridge Works, Chicago, \$17,466; American Bridge Company, Chicago, \$18,032; Worden-Allen Company, Chicago, \$16,111, and Wisconsin Bridge Company, Chicago, \$16,351.—I. J. Bryan, Clerk.

Geneva, Ill.—Council received five bids for the proposed State street bridge, which ranged from \$38,983, that of George R. Keacher, of Madison, Wis., to \$41,000, bid by Tooney & Co., Joliet. The bid of the John Wheeler Construction Company, of Geneva, however, which was \$39,200, and second lowest in actual figures, was in reality the lowest bid received, as the bid of Keacher contained provisions by which the city was to provide protection to property and maintenance of traffic across the river, which, it is estimated, will more than balance the difference of \$217.

Newton, Kan.—The County Commissioners of Harvey County have let the following bridge contracts: A pile bridge 76 feet long, 16 feet roadway contract let to B. H. Northcott for \$450, between sections 22 and 27 Pleasant township; a pile bridge 61 feet long, 14 foot roadway, between sections 29 and 32 Richland township, contract let to A. L. Lewellen for \$273.10, deck of this bridge to be of lumber from old bridge; a steel bridge 156 feet long across the Little River in Halstead township between sections 34 and 35, a 16 foot roadway, with concrete floor, contract let to Hughes & Hammond, agents of the Illinois Steel Bridge Co., for \$2,525, \$2,000 to be paid by the county and balance by the township.—J. A. Hunter, County Clerk.

Paducah, Ky.—The Vincennes Bridge Company, of Vincennes, Ind., May 5, was awarded by the Fiscal Court the contract to build a bridge over Clarks River and one over Perkins Creek, the firm's bid being \$20,300. The Clarks River bridge is to be built of concrete and iron and the Perkins Creek bridge entirely of concrete. There were ten bidders.

Boston, Mass.—Contract for constructing draw span of Chelsea street bridge, bids opened April 29, has been awarded to New England Structural Company, 110 State street, city, for \$18,948.—Wm. Jackson, City Engineer.

Newburyport, Mass.—The following are the bids opened April 27 for rebuilding chain bridge over Merrimack River: (a) using steel towers and replacing wooden sheathing around same; (b) using reinforced concrete towers: Charles F. Hall, 17 Milk street, Boston, (a) \$43,915, (b) \$47,090; Snare & Triest Company, 143 Liberty street, New York, N. Y., (a) \$64,300, (b)

\$58,300; H. P. Converse & Co., 88 Broad street, Boston, (a) \$82,700, (b) \$88,400.—R. R. Evans, Salem, County Engineer.

Salem, Mass.—The Essex County Commissioners have voted to reject all bids for the rebuilding of Chain bridge between Newburyport and Salisbury; the Commissioners will advertise again.

Ann Arbor, Mich.—The Toledo-Massillon Bridge Company, Toledo, O., has the contract to supply the structural iron for important bridge improvements in Ann Arbor; the principal steel bridge structure will be over the Huron River at Ann Arbor. This bridge will consist of nine span girders, six of them 80 feet long, one 50 feet long, one 46 feet long and one 24 feet long. The total length of the bridge will be 104 feet; the other structure will be a 104-foot trussed truss bridge over the Schawassa River at Byron, near Owosso. The construction of the latter bridge is already under way and work will be begun on the Huron River bridge in a short time.

Concord, N. H.—A contract for the construction of the new steel highway bridge across the Merrimack River in the village of Hooksett, to replace the old wooden covered bridge built in 1853, has been awarded to the United Construction Company, of Albany, N. Y., representing the American Bridge Company in the building of highway bridges in this section; the plans and specifications were prepared in the office of John W. Storrs in this city, who will superintend the construction of the bridge; the town appropriated \$26,000 for the work; the new structure will be what is known as a riveted Pratt truss bridge; it will be 500 feet long, with a 20-foot roadway and a 5-foot sidewalk. It will have a supporting capacity of a 15-ton road roller, or, in other words, it will support without danger a string of four-wheel wagons the whole length of the bridge, each carrying a load of 12 tons.

Greenville, O.—The contract for the completion of the Broadway bridge was given Mr. Yairger, of Indianapolis, who says the work will be completed by June 1; the bridge is of concrete, reinforced by steel bars.

Norwalk, O.—The County Commissioners have let two bridge contracts, one for a structure known as the Wheeler bridge in Greenfield township and the other known as the Lamoreaux bridge in Ridgefield township. There were three bidders on both jobs, as follows: The Modern Construction Company, Fremont; the Home Engineering and Construction Company, Canton, and the Buckeye Engineering Company, Norwalk. The Wheeler bridge was awarded the Home Engineering and Construction Company for \$490, complete and ready for travel; the Lamoreaux bridge went to the Modern Construction Company for \$789, complete and ready for traffic.

Newkirk, Okla.—The County Commissioners have let contracts for three bridges. One across the Arkansas River east of Newkirk, one east of Ponca City and one across the Chickaskia near Nardin. The bridge east of Newkirk will be constructed by the Illinois Bridge Company for \$24,985; the bridge across the Arkansas east of Ponca City by the Missouri Valley Company for \$24,200, and the bridge across the Chickaskia near Nardin by the Topeka Bridge and Iron Company for \$10,500.

Fond du Lac, Wis.—Bids were opened by the Board of Public Works May 1 for furnishing material and taking down present structures and erecting two new plate girder span bridges over West Branch of Fond du Lac River; lowest bid was that of the Wausau Iron Works, of Wausau.

STREET CLEANING AND REFUSE DISPOSAL

St. Charles, Ill.—Council is in favor of the erection of two new standpipe hydrants for street sprinkling work to be placed at the top of West and East Main street hill.

Haddonfield, N. J.—The Mayor and Property Committee have been ordered to report to Council May 20 as to the price of a street sprinkler.

Long Branch, N. J.—Ocean avenue, from Sea View to Lincoln avenue, will be sprinkled with oil during the coming summer; whether the fluid will be Dustoline or the product of the Standard Oil Company will depend largely on the demonstration made soon by the Standard Oil Company; Street Committee favor Dustoline and so has reported unanimously to Council.

Paterson, N. J.—No bids were received by the Board of Works for the cleaning of permanent streets by contract; specifications were not definite enough to enable contractors not familiar with the work to make a proper estimate.

Geneva, N. Y.—The Board of Works has appointed Commissioners Henry and Lynch

to serve with a committee which is to divide the streets into five sections and advertise for bids for sprinkling and flushing.

Columbus, O.—Plans are on file for three buildings to be erected for the Columbus garbage disposal plant and which, it is estimated, will cost about \$80,000, the amount of the appropriation; plans call for an office building, a green garbage building and a reduction building, each of which will be one story high, constructed of brick and reinforced concrete.

Braddock, Pa.—Council is considering a petition asking that a garbage plant be erected.

Olyphant, Pa.—Council is considering purchase of a street sprinkler.

Washington, Pa.—Citizens are urging the erection of a garbage furnace at a cost of from \$10,000 to \$15,000.

Wilkinsburg, Pa.—The Civic League has petitioned Council to arrange and dispose of the borough's garbage, refuse and ashes at the public expense.

Richmond, Va.—City did not let contract for erecting a 50-ton incinerator plant or crematory; matter has been referred to a Sub-committee of the Committee on Street Cleaning.—Henry J. Cohn, Superintendent.

Walla Walla, Wash.—City Clerk Hart was authorized to advertise for bids for caring for the city garbage for a year beginning May 15.

BIDS RECEIVED AND CONTRACTS AWARDED

Wilmington, Del.—Dr. Harrison W. Howell, President of the Health Board, May 3, threatened to resign because of the action of the Board in awarding to the highest instead of the lowest bidders the contracts for garbage collection in the city. The contracts as awarded were: First district, John W. Thompson, colored, \$6,498; Second district, A. G. B. Anderson, colored, \$10,620; Third district, Charles H. Colbourn, colored, \$11,372; Fourth district, Daniel McCormick, \$20,304. McCormick, who is a white man and a Democrat, was the only one to receive an award as a result of being the lowest bidder. The other successful contractors were all higher than rival bidders in the respective districts.

Jacksonville, Fla.—By action of the Board of Public Works the contract for erecting a new crematory in Jacksonville was awarded to the Dixon Engineering Company, of Toledo, O. This matter has occupied the attention of the Board since March 2, when bids from five companies were opened and read.

The proposals of the Dixon Engineering Company were numerous, as this concern submitted 22 distinct proposals on various types of construction on 40 and 50-ton plants, ranging from \$12,500 to \$19,000.

The Lewis & Kitchen Company, of Chicago, submitted proposals upon various plants according to different plans and specifications filed with their bids. For a 40-ton plant the figures were as follows: Specifications A, \$19,400; B, \$23,600; C, \$25,800; D, \$26,300. Fifty-ton plant specifications: E, \$21,800; F, \$25,100; G, \$31,700; H, \$32,200.

The Morse Bulger Company, of New York, offered to erect a 50-ton plant for \$15,000 and a 40-ton plant, \$13,900.

The Powers Specialty Company, of New York, also submitted two proposals on a 40 and 50-ton plant, the figures being \$46,700 for the 40-ton plant and \$49,900 for a 60-ton plant.

The bids of the Decarie Incinerator Company, of Minneapolis, were for the erection of a 40-ton plant for \$29,000 and a 50-ton plant for \$42,000. The 40 and 50-ton applies to the destroying capacity per day.

Fall River, Mass.—Chas E. Clark, Seekonk, Mass., has secured contract for removal of garbage for five years for a total of \$44,900.

West Point, N. Y.—The contract for the garbage furnace at West Point, bids for which were published April 21, was awarded to the Universal Destructor Company, of New York, for a Morse Destructor furnace at \$1,975.

Columbus, O.—All bids opened March 31 by the Board of Public Service for furnishing, delivering and installing for Contract No. 4, machinery and equipment for the garbage reduction plant adjacent to the Scioto River, Franklin Township, have been rejected and new bids will be received.—Irwin S. Osborn, Engineer garbage plant; E. W. Hirsch, Secretary.

MISCELLANEOUS

Phoenix, Ariz.—Council is considering an ordinance granting to J. F. Powell a franchise to install and operate a compressed air vacuum ventilating and cleaning system.—Frank Thomas, City Recorder.

Hackett, Ark.—City is considering the erection of a jail.

Biggs, Cal.—The City Trustees are considering the erection of a brick City Hall.

San Francisco, Cal.—Auditor John A. Koster has recommended that some of the police stations be rebuilt.

Pasadena, Cal.—The \$1,700 bid of the Spalding Company for furnishing playground apparatus has been rejected by Council and new advertisements have been ordered for complete playground apparatus and material for both boys' and girls' playgrounds.

New Canaan, Conn.—Architect Edgar A. Josselyn, New York City, has prepared plans for a two-story town hall.—E. B. Lawrence, Secretary Building Committee.

Crawfordsville, Ind.—Council has passed the franchise granting to the Central Station Engineering Company, of Chicago, the right to construct and put in operation a central station hot water heating plant in Crawfordsville; company is making final arrangements for the formation and incorporation of the Crawfordsville Heating Company, which is to operate the plant; capital, about \$140,000.

New Orleans, La.—The Bath Commission will make plans known shortly for the remodeling of the old schoolhouse in St. Mary street into a public bath house.

Baltimore, Md.—The Municipal Art Society has completed plans for placing a sculpture garden in Wyman Park, Charles street boulevard and Twenty-ninth street; Society has offered \$5,000 on condition that the city appropriate \$10,000 and that the Park Board construct the foundation and other essentials of the proposed garden.

East Longmeadow, Mass.—Town has voted to rescind order passed at the last town meeting whereby town voted to appropriate \$700 for a playground.

Detroit, Mich.—The Sub-committee on Extensions and Route Rearrangement has recommended municipally owned subways for transportation lines.

Detroit, Mich.—The General Fund Committee has voted that the voting machine item go back to Council in order that a \$125,000 bond issue may be authorized and the public bath house estimate of \$40,000 is to take the same course.

Crookston, Minn.—City is considering repairs to the city lock-up and constructing reinforced concrete floor; estimated cost, \$1,000.

Isanti, Minn.—Committee is investigating the construction of a new jail.

St. Louis, Mo.—Architect Isaac S. Taylor has prepared plans for a five-story city jail for the Board of Public Improvements.—A. J. O'Reilly, President.

Hastings, Neb.—Council is considering improvements to various parks; plans have been drawn.

Hoboken, N. J.—Council has passed an ordinance to provide for the issuing of \$50,000 playground bonds.—Jas. H. Londrigan, City Clerk.

Rahway, N. J.—Mayor C. B. Holmes will probably veto the \$10,000 bond ordinance passed by Council for the building of an almshouse.

Trenton, N. J.—H. C. Kelsey, Former Secretary of State, has purchased a site on West State street and will erect an art school which he will deed to the city.

Albany, N. Y.—State Engineer Frank M. Williams has presented to the Canal Board plans and specifications for dredging a channel 200 feet wide and 12 feet deep in the Mohawk River from Rexford Flats to Little Falls; estimated cost, over \$4,000,000; work will be divided into four contracts.

Little Falls, N. Y.—City is considering purchase of more ground for playground purposes.

New York, N. Y.—The Sinking Fund Commission has appropriated nearly \$1,000,000 for armory purposes; of this amount \$650,000 is for the armory of the Twenty-second Engineers and \$210,000 for the Seventh Regiment.

Rochester, N. Y.—The Board of Supervisors has voted to equip the Sheriff's office with an automobile; cost, \$1,200; bids will be advertised for a five passenger 20 h. p. car.

Conneaut, O.—Council is considering erection of an addition to the City Hall.

Hamilton, O.—The system of levee construction which has been devised by Engineer John W. Hill for the protection of the city from the encroachments of the river, plans for which will probably be submitted to Council very soon, is very thorough and cover the subject very exhaustively; estimated cost is \$250,000. Engineer Hill has another plan involving a 70-foot levee at an estimated cost of \$400,000.

Oakley, O.—City has awarded \$6,861.94 5 per cent improvement bonds to Season-good & Mayer.

Palmer, O.—City will remodel City Hall at a cost of \$7,000.

Durant, Okla.—Petitions are being circulated asking the Commissioners to call an election on \$135,000 bonds for the purpose of buying a site and erecting a jail and court house.

El Reno, Okla.—Citizens have voted \$50,000 bonds for a new City Hall.

Muskogee, Okla.—County Commissioners have ordered an election on \$225,000 for county jail, court house and site purposes.

Tulsa, Okla.—Citizens have voted \$6,000 bonds for establishment of a storage house.—T. C. Hughes, City Engineer.

Archbald, Pa.—Architect Harvey Revels has submitted plans for proposed borough building.

Butler, Pa.—Council has accepted gift of Godfrey L. Cabot, Boston, Mass., to furnish signs for all of the streets of the city.

Ebensburg, Pa.—The County Commissioners have decided to ask for bids for both brick and stone construction on the annex to the county jail.

North York, Pa.—E. M. Bare, E. W. Bare and H. G. March have been appointed a Committee to select a site and erect a lock-up.

Pittsburg, Pa.—The County Poor Board, with the approval of the County Commissioners, in a short time will issue \$400,000 worth of bonds for improvements at the county home at Woodville.

South Bethlehem, Pa.—Borough is considering renumbering of dwellings, particularly on the West Side; Street Committee, Chairman Wilson, will look into cost of new numbers.

Wilkes-Barre, Pa.—Council is considering an ordinance authorizing Public Property Committee to advertise for proposals for installing a private telephone system in the City Hall.

Wilkes-Barre, Pa.—Council is considering an ordinance authorizing the Joint Street Committee to purchase 25 more waste-paper cans.

Windber, Pa.—Council will purchase a public drinking fountain; cost, \$100.

Providence, R. I.—The House of Representatives has passed the resolution providing for the submission to the people of a bond issue for harbor improvements.

Beaufort, S. C.—City has sold a \$43,000 bond issue for the erection of a town hall and for other improvements.

Elizabethton, Tenn.—House has passed Senate bill to authorize town to construct a wall to protect it against the Doe River.

Jackson, Tenn.—House has passed a bill authorizing city to issue \$25,000 bonds for municipal buildings.

Dallas, Tex.—A committee will be appointed by the Mayor to recommend the purchase of a suitable automobile or other means of speedy carriage for the Board of Commissioners.

Houston, Tex.—City will spend \$1,000,000 this year on wharves and slips, paved streets and sewerage.—H. B. Rice, Mayor.

McKinney, Tex.—Citizens will vote May 31 on bonds for the erection of a modern City Hall and fire station.

Paris, Tex.—Plans are being prepared for remodeling the City Hall.—Earl P. McCulston, Mayor.

Barre, Vt.—Combining with certain private and railroad interests, City proposes to change the course of Jail Branch, shortening the course about 700 feet; the job will involve changes in streets, bridges, sewers and water pipes.—Geo. A. Reed, City Engineer.

Barre, Vt.—Council has voted to adopt plans for turning the river that now runs through the center of city from its present channel by digging a canal for $\frac{1}{2}$ mile; cost about \$150,000; work to begin at once.

Norfolk, Va.—Council is considering a petition for the acquirement of the Hilliard Point property and its conversion into a public park.

Seattle, Wash.—An ordinance has been introduced in Council appropriating \$3,000 for the purchase of chairs for the State armory.

Seattle, Wash.—The Park Board has adopted the Lancaster plan for a seaside boulevard on Magnolia Bluffs, including the purchase of 39 $\frac{1}{2}$ acres of land at Wolf Creek to be used as a natural park.

Seattle, Wash.—The Park Board has voted to acquire Bailey peninsula for park purposes by condemnation proceedings; owners ask \$2,000 per acre for the land.

Spokane, Wash.—The Palisade Improvement Company has purchased the Big Springs addition consisting of 304 lots; addition will be improved with graded streets, steel water mains and cement sidewalks; improvements in the addition will cost at least \$30,000.

South Milwaukee, Wis.—City has rejected all bids for building a jail.—Wm. G. O'Neill, City Clerk.

BIDS RECEIVED AND CONTRACTS AWARDED

San Francisco, Cal.—The Board of Public Works has awarded a contract to the Clinton Fireproofing Company for constructing a corporation yard for the Fire Department at a cost of \$48,900.

The Board of State Harbor Commissioners has awarded the contract for the construction of a shed on Pier 21, Filbert street wharf, to W. L. Graff, whose bid of \$12,843 was the lowest of eight bids.

The contract for furnishing cement was awarded to the Santa Cruz Portland Cement Company at the rate of \$1.90 a barrel; the amount which will be required is estimated at about 100,000 barrels.

New Haven, Conn.—Director of Public Works Foley will soon award the contract for an elevator in the City Hall. The bids opened May 6 were as follows: Welsh Machine Works, New York, \$2,650; Otis Electric Elevator Company, New York, \$2,484; A. B. See Electric Company of Boston, \$3,100; Warner Elevator Manufacturing Company, \$3,200; R. I. Elevator and Machine Company of Providence, \$2,600; shaft and incidental work, Yale Iron Company, \$5,770.

New Haven, Conn.—Director of Public Works Foley has awarded the contract or spraying the trees of the city in the first twelve wards, to kill the elm tree beetles, to Frederick B. Shattuck, of Boston. As there are approximately 7,000 trees to be sprayed, and as Mr. Shattuck's bid was \$1.50 a tree, the total cost to the city will be somewhat over \$10,500. The agreement is that Mr. Shattuck will use the spraying machine, recently purchased by the city, in conjunction with his own machines, paying a rental of \$350 for the same. He will also personally supervise the work. The contract calls for spraying of the trees with an arsenical liquid, and three if necessary, and the work will be started as soon as the trees have taken on their foliage. The lowest bidder was M. Hersell Smith, the well-known tree expert of Boston and Middletown, who bid \$1.49 a tree, but made a stipulation that if the third spraying became necessary he would charge an extra fee. The third and last bidder was H. L. Frost and Munson, Whitaker Company, of New York and Boston, who bid \$2.20 a tree.

Baltimore, Md.—The bid for the refrigerating plant for the city morgue and the bacteriological laboratory of the Health Department was awarded to the Aumen Machinery and Supply Company, of Baltimore; the price was \$4,236.65.

The contract for tulip bulbs was awarded to C. Keur & Sons, of Philadelphia, for \$550.

Lawrence, Mass.—Contract for the building of the levee around the culvert north of the Union Pacific depot has been let to Gus Brune, at 14 cents a yard with one cent a yard extra for overhaul of every 100 feet the dirt has to be brought after the first 300 feet; the levee will contain about 2,000 cubic yards of dirt and will cost about \$300.

Sault Ste. Marie, Mich.—Bids were received on April 20 as follows by Lieut.-Col. C. McD. Townsend, Corps Engrs., U. S. A.: Detroit, Mich., for the construction of a movable dam for St. Marys Falls canal, Sault Ste. Marie; Lawrence D. Weaning, Cleveland, O., \$119,318; Pennsylvania Bridge Company, Beaver Falls, Pa., \$122,733; Milwaukee Bridge Company, Milwaukee, Wis., \$134,007; Strobel Steel Construction Company, Chicago, Ill., \$147,789; Midland Bridge Company, Kansas City, Mo., \$170,461; Chicago Bridge and Iron Works, Chicago, \$171,635.

Long Branch, N. J.—Bids for the construction of 3,800 feet of jetty work by the United States Government at Sandy Hook were opened at the Ordnance Department, there being nine bidders, including three from Long Branch and vicinity. The bids ranged from \$8.15 to \$15 per foot. The lowest bidder was J. Addison Howland, of Sea Bright, whose bid was \$8.15 per foot. Benjamin A. Van Brunt, of Sea Bright, was second low bidder with \$8.40, and C. W. Dean & Co., of New York, third, with a bid of \$8.89. Thomas Proctor, of Long Branch, was associated with C. W. Dean & Co., the third lowest bidder. Howland and Dean & Co. agreed to complete the work in 100 working days and Van Brunt in 120 days. The jetty work will be constructed between the 1,000-yard target and the 2,500-yard target on the ocean side. It will be creosoted work. The Government appropriation for the construction of the work was \$30,000. Mr. Howland's bid was a trifle over \$31,000.

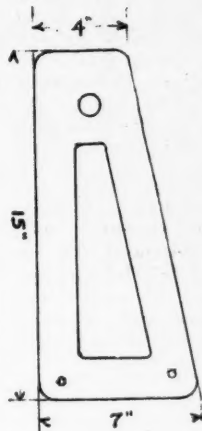
Rochester, N. Y.—The American Laundry Machine Company has been awarded the contract for supplying one washing machine for the Municipal Hospital.

Columbus, O.—The State Board of Public Works, April 28, awarded contracts for improvement of the Ohio and Erie Canal between Barborton and Akron as follows: 2,000 barrels cement, to the Portland Cement Company, of Cincinnati, at \$1.93 per barrel; for dredging Section 1 to Paul & Henry, of Barborton, for \$16,789; Section 2 to C. E. Miles, city, \$35,635; Section 3 to D. Gilmore, Toledo, \$16,218; Section 4 to Edw. Burdett, Toledo, \$16,610; Section 5 to the J. H. Kissner Construction Company.

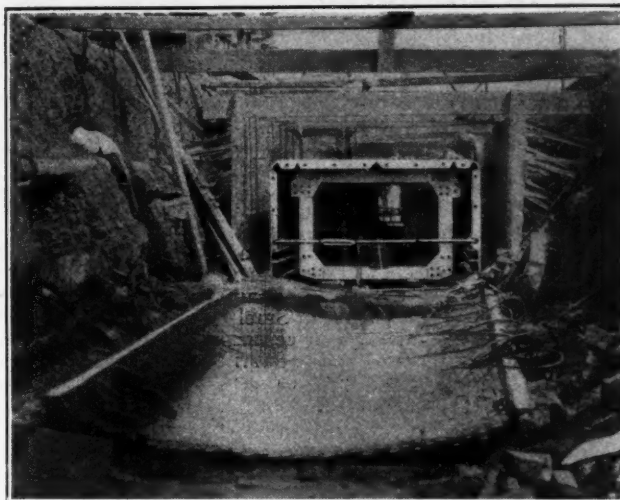
Coshocton, \$18,829, and for construction of the cemetery bar lock and culvert at Massillon to Wm. Brode & Co., Newcomerstown, \$9,428.

Columbus, O.—A contract between the Board of Service and the village officials at Hamden, Vinton County, was entered into whereby the prisoners of the village in the hills will be sent to the Columbus workhouse; city will receive 30 cents per day for prisoners. The contract becomes effective just as soon as signed by the Service Board.

Columbus, O.—Contracts for improvements on the northern division of the Ohio canal, approximating \$80,000, has been let by the State Board of Public Works; the Superior Portland Cement Company, of Cincinnati, will furnish the cement at \$1.03 a barrel, this contract amounting to \$20,600. Most of the work to be done is dredging and the contracts for this went to Paul & Henry, Edward Burdette and J. H. Kissner, the bid of the latter being almost \$19,000 and those of the others in the neighborhood of \$17,000 each. The bids of C. E. Miles of \$35,635, and D. Gilmour of \$16,218, were not accepted because of a fear that the appropriation for the year would not prove to be large enough to cover all the contemplated improvements for this year.



END VIEW OF HOLLOW
TILE CURB



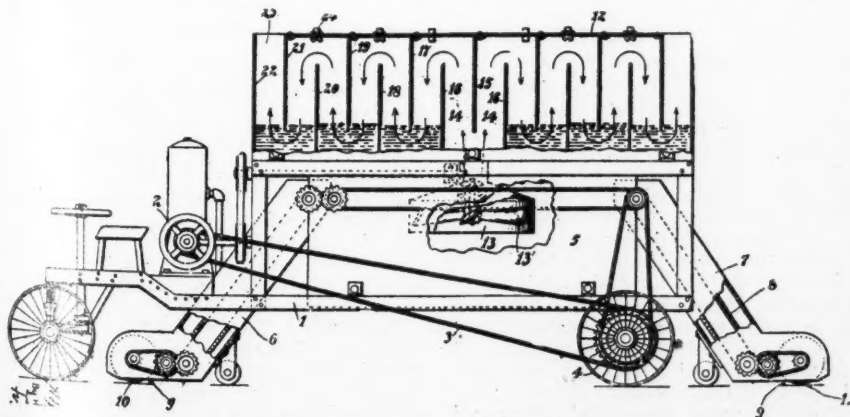
COLLAPSIBLE RECTANGULAR SEWER FORMS

MUNICIPAL APPLIANCES

Emerson Pneumatic Street Sweeper

A PATENT (No. 920,295) has been granted to Alfred S. Emerson, of New York, N. Y., for a street sweeping machine, a general account of which, with photographs, was included in the article on New York Street Cleaning in the MUNICIPAL JOURNAL AND ENGINEER for April 21. The claims of the patent are as follows: The combination with a dust collecting means comprising a receptacle having an outlet adjacent to each end thereof, and a divided inlet centrally thereof, said receptacle having at each side of said inlet alternately arranged partitions forming a tortuous passage to the outlet, the ends of all said partitions being immersed in a separating fluid, of means located adjacent to said divided inlet for positively conveying the dust and dust laden air into said inlet whereby it will be divided and moved in opposite directions through said fluid to the outlets.

The combination with a receptacle, a blower centrally located therein and means for delivering dust at opposite sides of the blower, of dust separating means comprising a receptacle having an outlet adjacent to each end thereof and a divided inlet centrally thereof and in communication with the discharge of the blower, said receptacle having at each side of said inlet alternately arranged partitions forming a tortuous passage to the outlet, the ends of all said partitions being immersed in a separating fluid, whereby the dust and the dust laden air will be divided and move in opposite directions through said fluid to the outlet.



EMERSON PNEUMATIC STREET CLEANER

Hollow Vitrified Street Curbing

THE American Sewer Pipe Company, Pittsburg, Pa., has placed on the market a hollow vitrified street curbing designed by A. B. Lea, County Engineer, Cuyahoga County, Ohio. The hollow space in the curbing does away with the necessity of laying the usual 4-inch drain tile under the curbing. The curbing will come in 2-foot sections, 15 inches in depth, measuring seven inches across the base and five inches at the top.

Box Centers for Concrete Culvert

THE Blair Collapsible Steel Centering Co., Westinghouse Building, Pittsburg, Pa., manufactures not only circular and arch centers for concrete sewerage work, but also centers for rectangular culverts. The accompanying illustration represents a collapsible steel box 8 feet wide, which is operated in 50-foot lengths. The inner frame of this collapsible box has attached to it casters and adjustable arms running out from the side of the frame to the steel shell. When the forms are ready to be removed, the collapsing iron is inserted and the form pulled in, dropped 2 inches and entire 50 feet of forms moved out in one operation. The sewer represented in the cut was constructed in Newark, N. J., under the direction of Edward S. Rankin, Engineer, Sewers and Drainage Board of Street and Water Commissioners. Referring to the work Mr. Rankin says that the centers were easily and rapidly moved and reset and the interior surface of the concrete was kept perfectly smooth and true.

PATENT CLAIMS

919,934. SURVEYING OR LEVELING INSTRUMENT. William Nugent, Denver, Col. Serial No. 445,800.

A surveying or leveling instrument comprising a pair of staffs, each staff embodying telescopic sections, a tripod for supporting each staff, a scale upon each staff, gage tubes slidably mounted upon the scales of the staff, a flexible conductor connecting the lower ends of said tubes, and suitable valves controlling the tubes.

920,220. ELECTRIC ARC LAMP. Christian J. Toerring, Philadelphia, Pa. Serial No. 315,056.

In an inverted arc lamp, a frame, an upper fixed carbon holder, movable lower carbon holder, a counter-weight, a flexible connection between the carbon holder and the counter-weight, a clutch to engage the flexible connection directly moving the counter-weight, and electro-magnetic means for operating the same.

920,295. STREET SWEEPER. Alfred S. Emerson, New York, N. Y. Serial No. 408,074.

Claims are set forth under "Municipal Appliances" with illustrated description.

920,312. REFUSE BURNER. Benjamin C. Fox, Chicago, Ill. Serial No. 444,344.

In a refuse burner comprising a receptacle, grate arranged in said receptacle, a hollow conical air supply member having its base resting on said grate, and means for supporting said grate, said means extending up into said conical member and adapted to support and maintain same in normal shape.

920,317. MOLD FOR MAKING CEMENT CONCRETE PIPE. Henry H. Gardner, Santa Ana, Cal. Serial No. 384,262.

A bell-end cement pipe mold jacket with the bell mold made sectional to allow of its expansion and contraction without buckling.

920,416. CONCRETE MIXER. Charles E. Bathrick, Chicago, Ill., assignor to Frederick C. Austin, Chicago, Ill. Serial No. 324,077.

In a machine for mixing concrete, and the like, a cubiform or substantially cubiform mixing receptacle mounted upon a tilting support and arranged to revolve about a diagonal axis, and breakers consisting of chains or rods arranged within the mixing receptacle in annular series about the axis of rotation, the breakers in conjunction with intersecting plants or sides of the receptacle forming a series of triangles, the apices of which are in or substantially in a plane transverse to and intersecting the axis of rotation, said plane also being oblique to and intersecting each breaker forming the hypotenuse of a triangle such as herein set forth.

920,559. SYSTEM FOR SUPPLYING AND DISTRIBUTING DRINKING WATER. George Fleming, Chicago, Ill. Serial No. 393,896.

In a system for supplying water, the combination with a water supply main, and a closed water distributing circuit communicating with said main and provided with a plurality of draw-off cocks, of a pump for maintaining a circulation of water in said closed circuit, and a water motor communicating with, and operated by the pressure of, the water supply main for actuating said pump.

TRADE NOTES

Cast Iron Pipe.—Chicago: Influenced by the increasing firmness of pig iron, prices of pipe are said to be correspondingly firmer. Quotations: 4-inch, \$27.50; 6 to 12-inch, \$26.50; 16-inch, \$24.50. Birmingham: Business transacted lately has been of small volume. Quotations: 4 to 6-inch, \$25; 8 to 12-inch, \$24; over 12-inch, average, \$23. New York: The Eastern demand continues light. Quotations: 6-inch, car-load lots, tidewater, \$23.50.

Lead.—Market is firm and active and prices are unchanged. American Smelting and Refining Company's price, 4.20 cents; outside interests sell at 4.10 cents. St. Louis price, 4.10 to 4.15 cents. London, soft Spanish, £13 5s, and English, £13 10s.

Reinforced Concrete Culvert Pipe.—The Virginia Portland Cement Company, Fordwich, Va., is prepared to receive orders for reinforced concrete bell and spigot culvert pipe in lengths of 8 feet, thickness 4 inches, cross section slightly elliptical, being 4 feet in the narrowest and 4 feet 4 inches in the longest diameter. The pipe is reinforced with $\frac{3}{8}$ -inch round rods, spaced 9 inches apart, running lengthwise of the pipe, and spaced on 2-inch centers around the pipe. The bell is reinforced with two $\frac{3}{8}$ -inch round bands. The reinforced concrete pipe will sustain a load of from 25 to 50 tons per linear foot of pipe. The shipping weight of each 8-foot section is 6,500 pounds. The mixture used is one part of Old Dominion Portland cement and four parts of limestone screenings that have passed through a $\frac{1}{4}$ -inch screen. This mix gives a tensile strength in pounds per square inch—three days 214 pounds, seven days 365 pounds, 28 days 536 pounds.

Smoke Consumer.—The Omaha, Neb., Council rejected the offer of the Bunson Smoke Consumer Company, fearing there was a "nigger in the woodpile" somewhere, and that the city might get into trouble. For the sake of introducing the consumers into Omaha the company offered to install one on the City Hall stack free of cost, but with the proviso that the city should pay at the end of one year the cost of the coal saved during the period. The Councilmen did not see how they could determine how much coal the consumer would save.

Paving Brick.—City Engineer Henry Maetzel, Columbus, O., and Engineer R. S. Flynn returned recently from Portsmouth, where they went to investigate that city's paving block. As a result of their investigation it is very probable that the curbing on Ohio avenue and the paving of Fourth avenue will be done with Portsmouth brick. Contractor M. J. Burns and C. E. Sullivan & Son have both bid on the work, to be done with Portsmouth block, but before the contract was awarded the Service Board decided to have the Engineers make an investigation of the value of the brick. The streets of Portsmouth that have been paved for 12 to 15 years with it are in fine condition, and the recommendation of the Engineer will be such that the contractor will be permitted to use the Portsmouth brick in Columbus.

Contractors' Equipment.—Hyde Bros. & Company, railway and contractors' equipment, of Pittsburg, Pa., announce the removal of their offices in New York City to the Hudson Terminal, Fulton Building, 50 Church street.

First Commercial Wireless Telephone.—What is claimed to be the first commercial wireless telephone system in the world was thrown open to the public in Portland, Me., April 15, and marks the beginning of the sweeping changes to take place in articulate communication throughout the civilized world. Four out of 30 stations which connect Portland with the islands of Casco Bay are in commission and selectivity is now an established fact. In order to prove that the problem of secrecy was solved, A. Frederick Collins, the inventor, and Mayor Clifford, of Portland, G. B. Reynolds, a U. S. navy wireless operator, and a newspaper correspondent talked at the same time and each receiving telephone got its message without interfering with the others.

Telephones.—The Saskatchewan government has concluded the purchase of the Bell telephone system in that province, consisting of the long-distance lines, local exchanges and equipment, and took formal possession May 1. The government had already an active system under construction. Cash was paid for the system. The Bell Telephone Company has no lines in Manitoba, Saskatchewan nor Alberta province.

Improvement Lectures.—Howard Everts Weed, landscape architect, 1715 Railway Exchange, Chicago, Ill., delivers a series of lectures before improvement associations, commercial clubs, park commissioners, chautauquas, women's clubs and civic organizations, which are illustrated by stereopticon views appropriate for each subject. Taken together, they form a series covering the entire field of civic and home improvement. They not only serve to awaken interest in civic matters but they tell how to accomplish results. The titles of the lectures are: "A More Beautiful America," "The Need of Parks and Children's Playgrounds," "The Ornamentation of the City Lot," "More Beautiful Cemeteries," "Trees, Shrubs and Flowers."

Gas Producers.—Dodge & Day, engineers, 608 Chestnut street, Philadelphia, have recently installed gas producers and regenerative gas furnaces of their own design in the plants of the Bradlee Chain Works and the Fayette R. Plumb Company in Philadelphia. In both of these installations the boilers, as well as the furnaces, are fired by gas from the producer. Dodge & Day have recently been commissioned by the Emerson Steam Pump Company, Alexandria, Va., to make a preliminary report and prepare plans for a new plant to be erected there.

Electric Meters.—The International Electric Meter Company announces its removal from 330 West Randolph street to 110-112 North Sheldon street, Chicago, Ill. In its new location the company has more space to care for its manufacturing and better facilities to meet the demands of its trade.

Constructing Engineer.—The Reicon Company, designing and constructing engineer, main offices at Knoxville, Tenn., has established branch offices at Johnson City, Tenn., and G. W. Blackford of the company will spend considerable time there to give attention to engineering in the city and its territory.

Electrical Contracting.—The McCord Engineering Company, organized by J. L., W. P. and C. M. McCord, will undertake general electrical, mechanical and civil engineering contracts; has equipped repair shop and electrical testing laboratory at 2-4-6 Nelson street; offices at 101-103 Forsyth street.

Steam Shovels.—The Browning Manufacturing Company, Mansfield, O., manufacture a standard revolving steam shovel, which is self-propelling, self-rotating and has a variable boom radius. The lower (or traveling) base, is formed of heavy castings and structural steel, mounted on either four wheels or on a pair of M. C. B. standard four-wheeled trucks. On the top of this is carried the large rotating gear and the turned roller path upon which the upper base rotates. The upper and lower bases are securely tied together by a hollow steel center pin, through which is carried the vertical propelling shaft. The upper (or rotating) base, which carries all the machinery, boiler, boom, etc., is made of a single heavy casting. This construction is claimed to be in every way superior to a built-up structure, as there is absolutely no possibility of the various parts working loose and throwing the shafting and other machinery out of line. All shafting is made of drawn steel, turned to size and with ground journals. All bearings are bushed with hard bronze instead of being simply babbitted. Gears are open-hearth steel castings and forged steel. All have cut teeth except the slow running propelling gears and the large hoisting drum gear, which are made with machine moulded teeth. All motions, except raising and lowering boom, are controlled by Browning patented friction clutches. These are of the expanding steel spring type and require practically no attention beyond keeping well oiled. All parts are of steel and are hardened and ground to exact size. The engines are double, and are reversible with link motion. Cylinders and cross head guides are cast and bored in one piece to insure absolute alignment. The boiler is upright, straight flue type, and is heavily jacketed with asbestos and galvanized steel. The coal bunker and water tank have a capacity sufficient for a half day of steady running. The operator and machinery are protected by a steel canopy top. The shovel will dig, swing through a full circle, and propel itself along the track. It will also switch cars. The shovels are made in several sizes, carrying from $\frac{1}{2}$ cubic yard to 2-cubic-yard dippers, and weighing from 20 to 50 tons.

New Gas Compressor.—The Westinghouse Air Brake Company has gone into the manufacture of a high-pressure gas transmission system. Many improvements have been made within the last few years in the making of gas, especially with the use of by-products. To prepare these by-products economically and in marketable shape requires a plant of considerable proportions and a large outlay of capital. The tendency is now to centralize gas plants and thus save the expense of sub-stations. This means, however, the addition of many pipe lines, which, with the lower pressure of gas transmission, has many disadvantages. To overcome this drawback the Westinghouse Air Brake Company has made a compressor which is adapted for the purpose of transmitting gas. It can be driven by either steam or an electric motor. It is connected with the gasometer, from which it draws the low-pressure gas and compresses it through a suitable storage reservoir into the high-pressure mains.

Portland Cement.—The Kosmos Portland Cement Company has resumed full production in its plant at Kosmosdale, Ky., and is prepared to make prompt shipments of cement in any quantity. This company has sales offices at Louisville, Ky.